MVC-FD95

SERVICE MANUAL

Level 2

Ver 1.1 2000. 07
With SUPPLEMENT-1
(9-929-828-81)

Self Diagnosis Supported model

Digital
Mavica

InfoLITHIUM™ L SERIES

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Hong Kong Model
Chinese Model
Tourist Model
Korea Model
Japanese Model

On the FC-72 board
This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the FC-72 board.
Therefore, schematic diagram, printed wiring board and electrical parts list of the FC-72 board are not shown.
The following pages are not shown.

Block diagram ..... Page 3-9 to 3-20
Schematic diagram ..... Page 4-9 to 4-26
Printed wiring board ..... Page 4-27 to 4-30
Electrical parts list ..... Page 6-9 to 6-16

The above-described information is shown in service manual Level 3.

This service manual contains information for japanese model as well.

When repairing it, confirm the type of LCD block referring page 6.

SPECIFICATIONS

System

Image device
1/2.7 type color CCD

Lens
10× zoom lens
f = 6.0 – 60.0 mm (1/4 – 2 3/8 inches) (39 – 390 mm (1 9/16 – 15 3/8 in) when converted into a 35 mm still camera)
F = 2.8

Exposure control
Automatic exposure

White balance
Automatic, Indoor, Outdoor, One-push

Data compression system
Movie: MPEG1
Still:
Floppy disk: JPEG (JFIF)
"Memory Stick": JPEG (Exif2.1)
GIF (in TEXT mode)
Audio (with still image): MPEG AUDIO (Monaural)

Recording medium
Floppy disk:
3.5 inch 2HD MS-DOS format (1.44MB)
MSAC-FD2M Floppy Disk Adaptor for Memory Stick:
DCF98 format

Flash
Recommended recording distance:
0.6 m to 2.5 m (23 5/8 in to 8 1/3 feet)

Input and Output connector

AUDIO (MONO) /VIDEO OUT (Monaural)
Minijack Video:
1 Vp-p, 75 Ω, unbalanced, sync negative
Audio: 327 mV (at a 47 kΩ load)
Output impedance: 2.2 kΩ

External flash jack
Minijack

LCD screen

Used LCD panel
TFT (Thin Film Transistor active matrix) drive

Total number of dots
123,200 (560×220) dots

Finder

Used LCD panel
TFT (Thin Film Transistor active matrix) drive

Total number of dots
180,000 (800×225) dots

General

Application
Sony battery pack NP-F330 (supplied)/F550

Power requirements
8.4 V

Power consumption (During shooting)
3.9 W (When using the LCD screen)
3.5 W (When using the finder)

Operation temperature
0°C to 40°C (32°F to 104°F)

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Maximum dimensions
126×124×184 mm (5×5×7 1/4 in) (w/h/d)

Mass
Approx. 970 g (2 lb 2 oz) (including battery, floppy disk and lens cap, etc.)

Built-in microphone
Electret condenser microphone

Built-in speaker
Dynamic speaker

AC-L10A/L10B/L10C AC power adaptor

Power requirements
100 V to 240 V AC, 50/60 Hz

Rated output voltage
DC 8.4 V, 1.5 A in operating mode

Operation temperature
0°C to 40°C (32°F to 104°F)

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Maximum dimensions
125×39×62 mm (5×1 9/16×2 1/2 inches) (w/h/d)

Mass
Approx. 280 g (10 oz)

NP-F330 battery pack

Used battery
Lithium ion battery

Maximum voltage
DC 8.4 V

Nominal voltage
DC 7.2 V

Capacity
5.0 Wh (700 mAh)

Accessories

AC-L10A/L10B/L10C AC power adaptor (1)
Power cord (mains lead) (1)
NP-F330 battery pack (1)
A/V connecting cable (1)
Shoulder strap (1)
Lens cap (1)
Lens cap strap (1)
CD-ROM (1)
Operating instructions (1)

Design and specifications are subject to change without notice.

DIGITAL STILL CAMERA

SONY®

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

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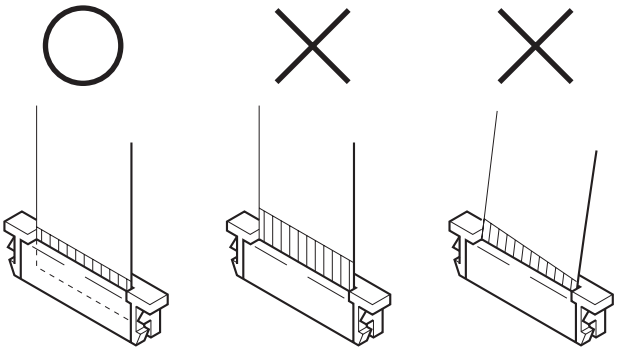
Electrical parts list of the FC-72 board is not shown. pages 6-9 to 6-16 are not shown.

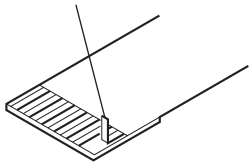
* Parts reference sheet and color reproduction frame is shown on page 153.

• NOTE FOR REPAIR

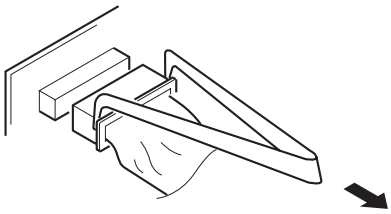
Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
Do not insert the cable insufficiently nor crookedly.



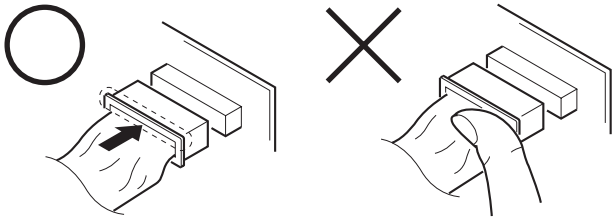
Cut and remove the part of gilt which comes off at the point. (Take care that there are some pieces of gilt left inside)



When remove a connector, don't pull at wire of connector. Be in danger of the snapping of a wire.



When installing a connector, don't press down at wire of connector. Be in danger of the snapping of a wire.

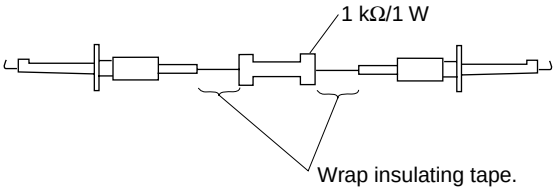


[Discharging of the FLASH unit's charging capacitor]

The charging capacitor of the FLASH unit is charged up to the maximum 300 V potential.
There is a danger of electric shock by this high voltage when the capacitor is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the MVC-FD95 is simply turned off. Therefore, the remaining voltage must be discharged as described below.

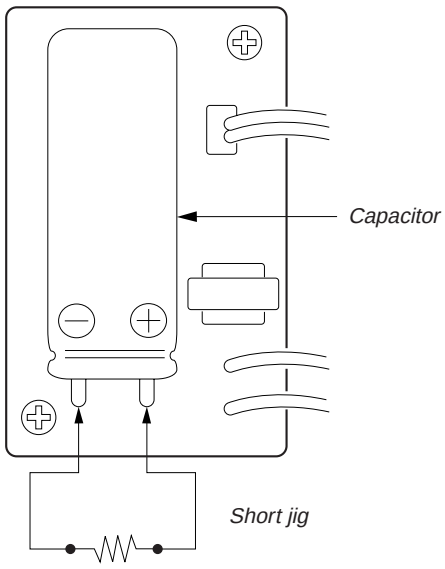
Preparing the Short Jig

To preparing the short jig. a small clip is attached to each end of a resistor of 1 kΩ /1 W (1-215-869-11)
Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.



Discharging the Capacitor

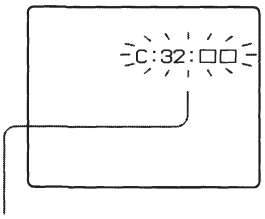
Short circuits between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.



[Description on Self-diagnosis Display]

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digit display informs you of the camera current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

- C: □□: □□
  The contents which can be handled by customer, are displayed.
- E: □□: □□
  The contents which can be handled by engineer, are displayed.

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:01	Change the disk and turn off the main power then back on.	Defective floppy disk.	DRIVE ERROR
C:13:01	Replace the floppy disk. Format the floppy disk with the MVC-FD95.	• The type of floppy disk that cannot be used by this machine, is inserted. (Such as 2DD) • Data is damaged. • Unformatted disk is inserted.	DISK ERROR
E:91:01	Checking of flash unit or replacement of flash unit	*2 Abnormality when flash is being charged.	Flash LED Flash display Flashing at 3.2 Hz
*1 E:61:00	Checking of lens drive circuit	When failed in the focus initialization.	—
*1 E:61:10			

Note: The error code is cleared if rthe battery is removed, except defective flash, unit.

*1 : The error display is given in two ways.

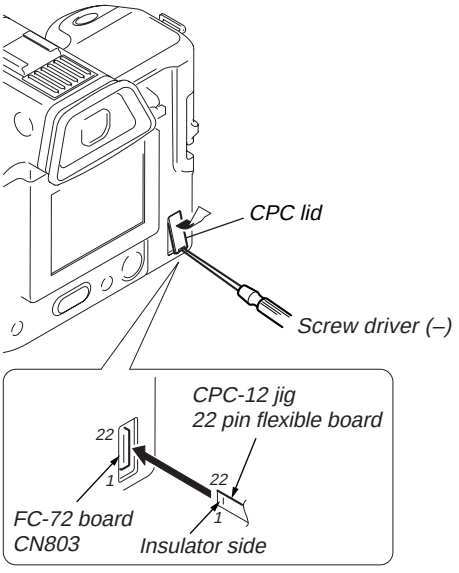
*2 : When the flash charging failed, Page:D, Address:67, Data:04 are written.
After repair, be sure to write Page:D, Address:67, Data:00.

LCD Type Check

By measuring the resistor value between Pin ⑬ of CN803 and Pin ④ of CN803, the type of LCD can be discriminated.

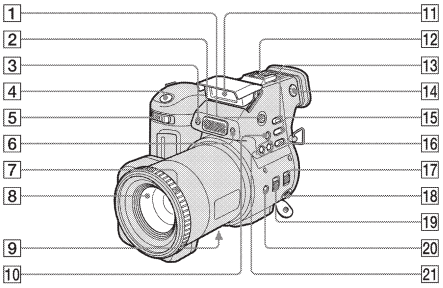
Resistor value	LCD type	Adjustment
4.7 kΩ	TYPE SH	Perform "1-5-2. LCD SYSTEM
47 kΩ	TYPE CA	ADJUSTMENT

Note : To replace the PK-49 board and LCD module, discriminate the type of LCD and replace them in combination of the same type.



Identifying the parts

See the pages in parentheses for details of operation.



1 **OPEN (FLASH) button (19)**

2 **Built-in microphone**
Do not touch while recording.

3 **Self-timer lamp (19)**

4 **Shutter button (15, 21)**

5 **Zoom lever (17)**

6 **Photocell window for flash**
Do not block while recording.

7 **Focus ring (39)**

8 **Lens**

9 **DC IN cover/DC IN jack (9, 11)**

10 **(One-push white balance) button (42)**

11 **Flash (19)**

12 **Accessory shoe**

13 **SPOT METER button (41)**

14 **Finder adjustment dial (16)**

15 **WHITE BALANCE button (42)**

16 **PROGRAM AE button (40)**

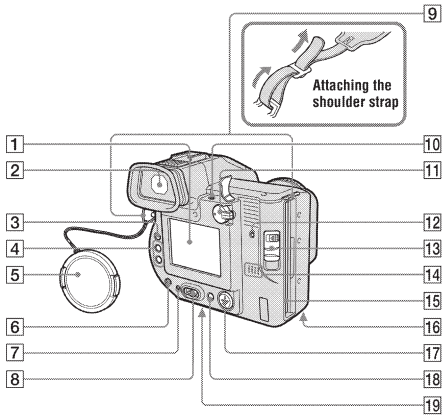
17 **STEADY SHOT ON/OFF switch (18)**

18 **AUDIO (MONO) /VIDEO OUT jack (47)**
Audio output is monaural.

19 **FOCUS AUTO/MANUAL switch (38, 39)**

20 **(Macro) button (38)**

21 **PROGRAM AE +/– buttons (40)**



1 **LCD screen**

2 **Finder (16)**

3 **LCD ON/OFF switch (16)**

4 **VOL +/– buttons (24)**

5 **Lens cap (supplied)**

6 **(Flash) button (19)**

7 **ON/CHG (Charge) lamp (9)**

8 **POWER switch (12)**

9 **Hooks for strap**

10 **(External flash) jack**

11 **PLAY/STILL/MOVIE selector (29)**

12 **ACCESS lamp (16)**

13 **DISK EJECT lever (14)**

14 **Speaker**

15 **Floppy disk slot (14)**

16 **Battery cover/PUSH button (bottom surface) (8)**

17 **Control button (29)**

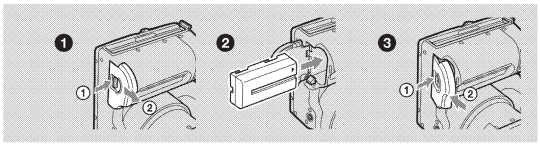
18 **DISPLAY button (18)**

19 **Tripod receptacle (bottom surface)**
Use a tripod with a screw length of less than 6.5 mm (7/32 inch). You will be unable to firmly secure the camera to tripods having longer screws, and may damage the camera.

Preparing the power supply

Installing the battery pack

Your camera operates only with the NP-F330 (supplied)/F550 (not supplied) "InfoLITHIUM" battery pack* (L series).



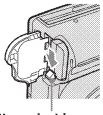
1 **Open the battery cover.**
Slide the battery cover in the direction of the arrow while pressing the PUSH button.

2 **Install the battery pack.**
Insert the battery pack with the ▲ mark facing toward the battery compartment as illustrated.

3 **Close the battery cover.**

To remove the battery pack

Open the battery cover. Slide the battery eject lever rightward, and remove the battery pack.
Be careful not to drop the battery pack when removing it.



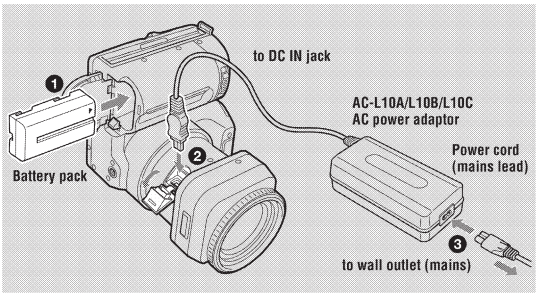
Battery eject lever

** What is "InfoLITHIUM"?*

"InfoLITHIUM" is a lithium ion battery pack which can exchange information such as battery consumption with compatible video equipment. "InfoLITHIUM" L series battery packs have the mark. "InfoLITHIUM" is a trademark of Sony Corporation.

Charging the battery pack

When the camera is turned on, you cannot charge the battery pack. Be sure to turn off the power of the camera.



1 **Insert the battery pack into your camera.**

2 **Open the DC IN cover and connect the DC connecting plug to the DC IN jack of your camera with the ▲ mark facing up.**

3 **Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (mains).**
The ON/CHG lamp (orange) below the LCD screen lights up when charging begins. When the ON/CHG lamp goes off, **normal charge** is completed. For **full charge**, which allows you to use the battery longer than usual, leave the battery pack inserted for about one hour after normal charge is completed.

Battery remaining indicator

The LCD screen or finder on the camera shows the remaining time for which you can still record or play back images.
This indication may not be entirely accurate depending on the conditions of use and the operating environment.

Auto power-off function

If you do not operate the camera for about three minutes during recording, the camera turns off automatically to prevent wearing down the battery pack. To use the camera again, slide the POWER switch to the right to turn on the camera again.

Charging time

Battery pack	Full charge (min.)	Normal charge (min.)
NP-F330 (supplied)	Approx. 150	Approx. 90
NP-F550	Approx. 210	Approx. 150

Approximate time to charge a completely discharged battery pack using the AC-L10A/L10B/L10C AC power adaptor. (Lower temperatures require a longer charging time.)

Battery life and number of images that can be recorded/played back

STILL mode recording/playback

	NP-F330 (supplied)		NP-F550	
	Battery life (min.)	Number of images	Battery life (min.)	Number of images
Continuous recording*	Approx. 65 (60)	Approx. 650 (550)	Approx. 150 (130)	Approx. 1600 (1300)
Continuous playback**	Approx. 80 (75)	Approx. 2200 (2000)	Approx. 170 (150)	Approx. 4800 (4200)

Approximate battery life and number of images that can be recorded/played back with a fully charged battery pack at a temperature of 25 °C (77 °F), 640×480 image size and in NORMAL recording mode. Numbers in parentheses indicate the time when you use a normally charged battery pack.

* Recording at about 5-second intervals

** Playing back single images continuously at about 2-second intervals

MOVIE mode recording

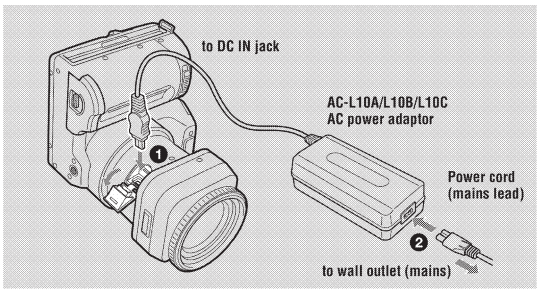
	NP-F330 (supplied)		NP-F550	
	Battery life (min.)	Number of images	Battery life (min.)	Number of images
Continuous recording	Approx. 70 (60)	Approx. 50 (40)	Approx. 160 (140)	Approx. 120 (100)

Approximate time that can be recorded with a fully charged battery pack at a temperature of 25°C (77°F) and 160×112 image size. Numbers in parentheses indicate the time when you use a normally charged battery pack.

Notes

- The battery life and number of images will be decreased when using at low temperature, using the flash, turning the power on/off frequently, or using the zoom.
- The capacity of the floppy disk is limited. The above figures are a guide when you continuously record/play back by replacing the floppy disk.
- If sufficient battery remaining time is indicated but the power runs out soon, fully charge the battery so that the correct battery remaining time appears.
- Do not short the DC plug of the AC power adaptor with a metallic object, as this may cause malfunction.
- Do not expose the battery pack to water.

Using the AC power adaptor



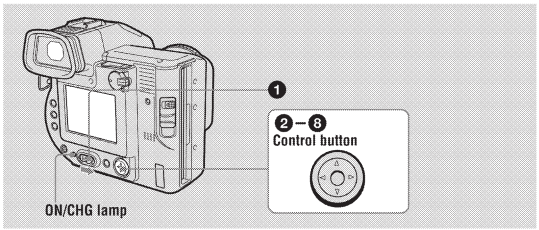
1. Open the DC IN cover and connect the DC connecting plug to the DC IN jack of your camera with the ▲ mark facing up.
2. Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (mains).

Using a car battery

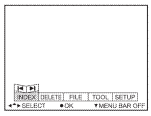
Use Sony DC adaptor/charger.

Setting the date and time

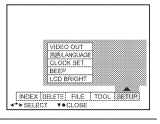
When you first use your camera, set the date and time. If these are not set, the CLOCK SET screen appears whenever you turn on your camera for recording.



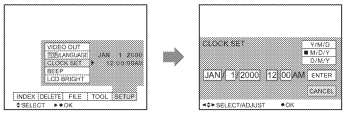
1. **Slide the POWER switch to the right to turn on the power.**
   The ON/CHG (green) lamp lights up.
2. **Press ▲ on the control button.**
   The menu bar appears on the LCD screen or on the finder.



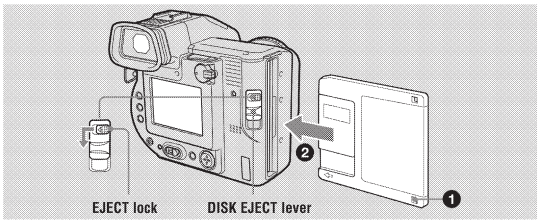
3. **Select [SETUP] with ► on the control button, then press the center ●.**



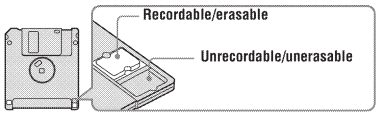
4. **Select [CLOCK SET] with ▲/▼ on the control button, then press the center ●.**



Inserting a floppy disk



1 **Check that the write protect tab is set to the recordable position for recording.**



2 **Insert the floppy disk until it clicks.**

Usable floppy disks

- Size: 3.5 inch
- Type: 2HD
- Capacity: 1.44 MB
- Format: MS-DOS format (512 bytes × 18 sectors)

You can use the "Memory Stick"* (not supplied) with inserting it into the MSAC-FD2M Floppy Disk Adaptor for Memory Stick (not supplied), other than floppy disks mentioned above.

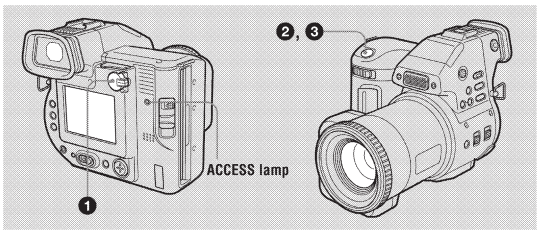
* "Memory Stick" and are trademarks of Sony Corporation.

Removing the floppy disk

While sliding the EJECT lock to the left, slide down the DISK EJECT lever.

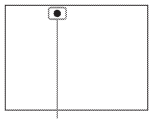
Recording still images

Still images are recorded in JPEG format.
To record still images, slide the POWER switch to the right to turn on the power and insert a floppy disk.



1 **Set the PLAY/STILL/MOVIE selector to STILL.**

2 **Press and hold the shutter button halfway down and check the image.**
While the AE lock indicator ● (green) is flashing, the image is frozen, however, the image is not yet recorded. When the camera finishes the automatic adjustments*, the AE lock indicator ● lights up and the camera is ready for recording.
To cancel the recording, release the shutter button.



3 **Press the shutter button fully down.**
The shutter clicks and the image is recorded on the floppy disk.

* The exposure and focus are automatically adjusted. The focus is not automatically adjusted when the camera is in manual focus mode.

For the number of images you can record on a floppy disk

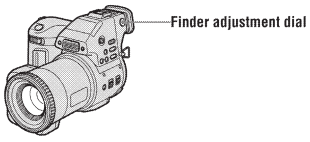
See page 36.

Notes

- When recording bright subjects, the color of the LCD screen or the finder may change after the AE is locked, however, this will not affect the recorded image.
- While the image is being recorded on a floppy disk, the ACCESS lamp lights. When this lamp is lit, do not shake or strike the camera. Also, do not turn the power off, or not remove the battery pack/floppy disk. Otherwise, an image data breakdown may occur and the floppy disk may become unusable.
- When using a "Memory Stick," writing and reading images take about twice times than using a floppy disk.

Recording images with the finder

Turn the finder adjustment dial until the image appears clearly within the finder, then record the image.

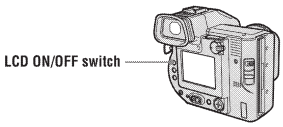


Note

The finder display is automatically turned off when your face is not near the finder.

To turn off the LCD screen

Set the LCD ON/OFF switch to OFF.



Notes

- You cannot turn off the LCD screen when [DEMO] is set to [ON] in the menu setting.
- When the LCD ON/OFF switch is set to OFF and the finder display is turned off, you can only operate the LCD ON/OFF switch, POWER switch, and the PLAY/STILL/MOVIE selector.

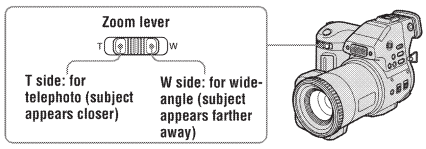
Adjusting the brightness of the LCD screen

Adjust the brightness with the [LCD BRIGHT] item in the menu settings (page 35). This adjustment does not affect the brightness of the images recorded on the floppy disk.

Checking the last recorded image (Review)

Clear the menu bar (page 30), and press ◄ on the control button. To return to the normal recording mode, press lightly on the shutter button or select [RETURN] with ◄/► on the control button and then press the center ●. To delete the image, select [DELETE] on the review screen with ◄/► on the control button, then press the center ●. And select [OK] with ▲ on the control button, then press the center ●.

Using the zoom feature



If you cannot get a sharp focus on a close subject

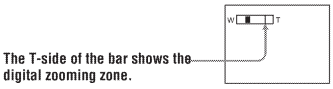
Slide the zoom lever to the W side and move closer to the subject until the focus is sharp.

Minimum focal distance to the subject

W side: About 25 cm (9 7/8 inches) or more
T side: About 80 cm (31 1/2 inches) or more
To record even closer subjects, see page 38.

Digital zoom function

This camera has a digital zoom function.
Digital zoom enlarges the image by digital processing, and it starts to function when the zoom exceeds 10×.



Using digital zoom

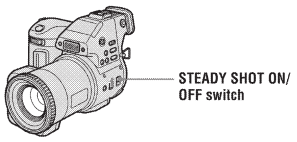
- The maximum zoom magnification is 20×.
- Digital zooming deteriorates the picture quality. When digital zoom is not necessary, set [DIGITAL ZOOM] to [OFF] in the menu settings (page 34).

Note

Digital zoom does not work for moving images.

Activating the SteadyShot function

When the SteadyShot function is working, the camera compensates for camera-shake.



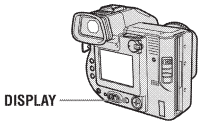
Set the STEADY SHOT ON/OFF switch to ON. The (SteadyShot) indicator appears on the LCD screen or on the finder.

Notes

- The SteadyShot function will not correct excessive camera-shake.
- If you use a wide conversion lens (not supplied), this lens may influence the SteadyShot function.

LCD screen or finder indicators during recording

Press DISPLAY to turn on/off the indicators on the LCD screen or on the finder. See page 65 for a detailed description of the indicators.

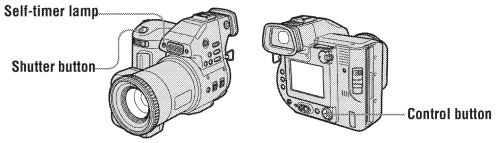


Notes

- You cannot turn off the (self-timer) indicator and some of the indicators used in advanced operations.
- The indicators on the LCD screen or on the finder are not recorded.

Using the self-timer

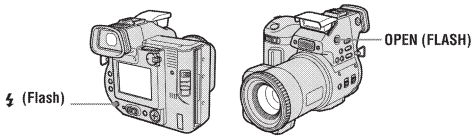
When you use the self-timer function, the subject is recorded 10 seconds after you press the shutter button.



Select on the LCD screen with ▲/▼/◄/► on the control button, then press the center ●. The (self-timer) indicator appears on the LCD screen or on the finder, and the subject is recorded 10 seconds after you press the shutter button. The self-timer lamp flashes after you press the shutter button until the image is recorded.

Recording images with the flash

Press OPEN (FLASH) to pop up the flash. The initial setting is AUTO (no indication). In this mode, the flash automatically strobes when the surroundings become dark. When you change the flash mode, press (Flash) repeatedly so that the flash mode indicator appears on the LCD screen or on the finder. This setting can be set only when the flash is popped up.



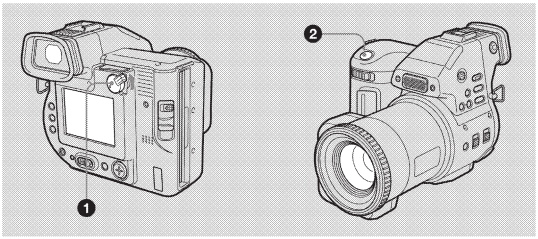
Each time you press the button, the indicator changes as follows.
(No indication) → → → → (No indication)
Auto red-eye reduction : The flash preparatively strobes before recording to reduce the red-eye phenomenon.
Forced flash : The flash strobes regardless of the surrounding brightness.
No flash : The flash does not strobe.
You can change the amount of the flash light with [FLASH LEVEL] in the menu settings (page 34).

Notes

- The recommended shooting distance is 0.6 to 2.5 m (23 5/8 inches to 8 1/3 feet).
- Attaching a conversion lens (not supplied) may block the light from the flash and the recorded image may be eclipsed.
- You cannot use the built-in flash and an external strobe at the same time.
- The indicator appears when the flash is not popped up under situations that you should use the flash.
- Auto red-eye reduction may not produce the desired red-eye reduction effects depending on individual differences, the distance to the subject, if the subject does not see the pre-strobe, or other conditions. In addition, red-eye reduction effects are also difficult to obtain if you select a slow shutter speed in shutter priority mode of the PROGRAM AE function.
- The flash effect is not obtained easily when you use forced flash in a bright location.

Recording moving images

Moving images with audio are recorded in MPEG format.
To record moving images, slide the POWER switch to the right to turn on the power and insert a floppy disk.



1 Set the PLAY/STILL/MOVIE selector to MOVIE.

2 Press the shutter button fully down.
"REC" appears on the LCD screen or on the finder, and the image and sound are recorded on the floppy disk.

If you press the shutter button momentarily
The image and sound are recorded for 5 seconds. The recording time can be set to 10 or 15 seconds with [REC TIME SET] in the menu settings (page 33).

If you hold the shutter button down
The image and sound are recorded while the shutter button is held down for up to 60 seconds. However, when [IMAGE SIZE] in the menu settings is set to [320×240], the maximum recording time is 15 seconds (page 36).

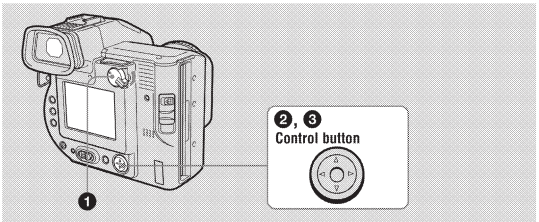
Adjusting the brightness of the LCD screen, zooming or using the self-timer

See page 16 to 19.

LCD screen or finder indicators during recording

Press DISPLAY to turn on/off the indicators on the LCD screen or on the finder. These indicators are not recorded. See page 65 for a detailed description of the indicators.

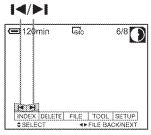
Playing back still images



❶ Set the PLAY/STILL/MOVIE selector to PLAY.
The last recorded image (still or moving) appears on the LCD screen or on the finder.

❷ Press ▲ on the control button to display the menu bar on the LCD screen or on the finder.

❸ Select the desired still image with the control button.
Press ▲/▼/◀/▶ on the control button to select ⏮/⏭ on the LCD screen or on the finder, then press ◀/▶.
⏮: To display the preceding image.
⏭: To display the next image.



When the menu bar is not displayed

You can directly select and play back the image with ◀/▶ on the control button.

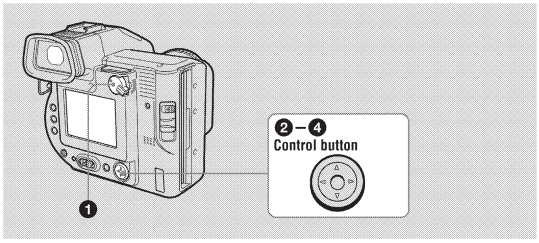
Notes

- You might not be able to correctly play back images recorded with this camera on other equipment.
- You may not be able to play back images whose image sizes are larger than the maximum image size that can be used with this camera for recording.

LCD screen or finder indicators during still image playback

Press DISPLAY to turn on/off the indicators on the LCD screen or on the finder.
See page 66 for a detailed description of the indicators.

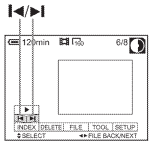
Playing back moving images



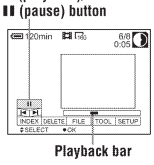
❶ Set the PLAY/STILL/MOVIE selector to PLAY.
The last recorded image (still or moving) appears on the LCD screen or on the finder.

❷ Press ▲ on the control button to display the menu bar on the LCD screen or on the finder.

❸ Select the desired moving image with the control button.
Moving images are displayed one size smaller than still images.
Press ▲/▼/◀/▶ on the control button to select ⏮/⏭ on the LCD screen or on the finder, then press ◀/▶.
⏮: To display the preceding image.
⏭: To display the next image.



❹ Select the ▶ (playback) button on the LCD screen or on the finder with ▲ on the control button, then press the center ●.
The moving image and sound are played back.
During playback, ▶ (playback) changes to ❚❚ (pause).



To pause playback

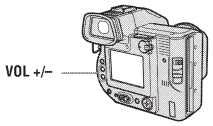
Select ❚❚ (pause) on the LCD screen or on the finder with ▲/▼/◀/▶ on the control button, then press the center ●.

When the menu bar is not displayed

You can directly select the image with ◀/▶ on the control button, and play back the image and sound by pressing the center ●. When you press the center ● during playback, playback is paused.

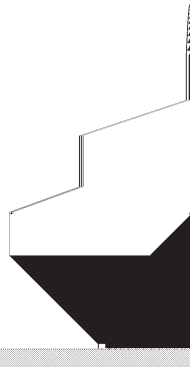
Adjusting the volume

Press VOL +/– to adjust the volume.



LCD screen or finder indicators during moving image playback

Press DISPLAY to turn on/off the indicators on the LCD screen or on the finder.
See page 66 for a detailed description of the indicators.



Viewing images

For Windows 98 users

1. **Start up your personal computer and insert the floppy disk into the disk drive of your personal computer.**
2. **Open [My computer] and double click [3 1/2 Floppy (A:)].**
3. **Double-click the desired data file.**
   Copying moving image files and audio files to the hard disk of your personal computer before viewing is recommended. If you play back the file directly from the floppy disk, the image and sound may break off.

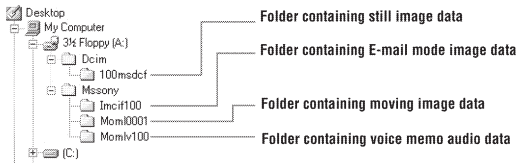
• Windows and Windows NT, ActiveMovie, DirectShow are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
• Macintosh and Mac OS, QuickTime are trademarks of Apple Computer, Inc.
• All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies.
Furthermore, "™" and "®" are not mentioned in each case in this manual.

The numerical portion of the following files are the same.
— An image file recorded in VOICE mode and its corresponding audio file
— An image file recorded in E-MAIL mode and its corresponding small-size image file
— INDEX display files cannot be played back on other equipment.

When using "Memory Stick"s

□□□□ stands for any number within the range from 0001 to 9999.

For Windows 98 users (The drive recognizing the Floppy Disk Adaptor for Memory Stick is [A].)



Folder	File	Meaning
100msdcf	DSC0□□□□.JPG	• Still image file recorded normally • Still image file recorded in E-MAIL mode (page 37) • Still image file recorded in VOICE mode (page 37)
	TXT0□□□□.GIF	• Still image file recorded in TEXT mode (page 38)
Imcif 100	DSC0□□□□.JPG	• Small-size image file recorded in E-MAIL mode (page 37)
Moml0001	MOV0□□□□.MPG	• Moving image file
Momlv100	DSC0□□□□.MPG	• Audio file recorded in VOICE mode (page 37)

The numerical portion of the following files are the same.
— An image file recorded in VOICE mode and its corresponding audio file
— An image file recorded in E-MAIL mode and its corresponding small-size image file

Image file storage destinations and image file names

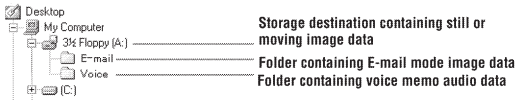
Image files recorded with your camera are grouped in folders by recording mode. Images in a floppy disk and ones in a "Memory Stick" have different file names. The meanings of the file names are as follows.

When using floppy disks

□□□ stands for any number within the range from 001 to 999.
△ stands for one of the following characters below.

S: Still image file recorded at 640×480 size
F: Still image file of more than 640×480 size
V: Moving image file recorded at 160×112 size
W: Moving image file recorded at 320×240 size

For Windows 98 users (The drive recognizing the floppy disk is [A].)



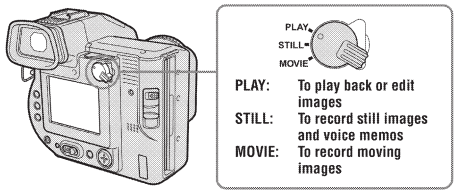
Location	File	Meaning
3 1/2 Floppy (A:)	MVC-□□□△.JPG	• Still image file recorded normally • Still image file recorded in E-MAIL mode (page 37) • Still image file recorded in VOICE mode (page 37)
	MVC-□□□△.411	• INDEX display file This file can only be played back on your camera.
	MVC-□□□△.MPG	• Moving image file
	MVC-□□□T.GIF	• Still image file recorded in TEXT mode (page 38)
E-mail folder	MVC-□□□E.JPG	• Small-size image file recorded in E-MAIL mode (page 37)
Voice folder	MVC-□□□A.MPG	• Audio file recorded in VOICE mode (page 37)

Advanced operations

Before performing advanced operations

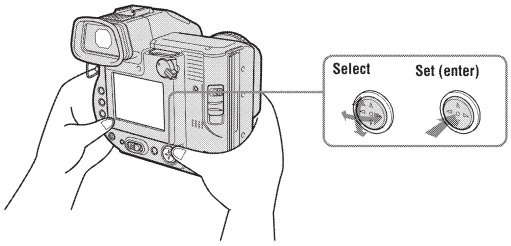
This section describes the basic control methods that are frequently used for "Advanced operations."

How to use the PLAY/STILL/MOVIE selector

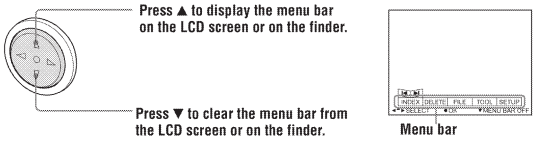


How to use the control button

The control button is used to select the buttons, images and menus displayed on the LCD screen or on the finder of your camera and modify the settings. The operation methods that are frequently used for "Advanced Operations" are described below.



Turning on/off the operation buttons (menu bar) on the LCD screen or on the finder

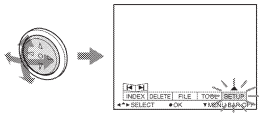

Press ▲ to display the menu bar on the LCD screen or on the finder.
Press ▼ to clear the menu bar from the LCD screen or on the finder.
Menu bar

Note

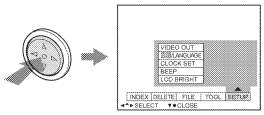
You cannot clear the menu bar on the INDEX screen (page 44).

Selecting items or images on the LCD screen or on the finder

❶ **Press ▲/▼/◀/▶ on the control button to select the item you want to set or the image you want to display.**
The color of the selected item or the frame of the selected image changes from blue to yellow.



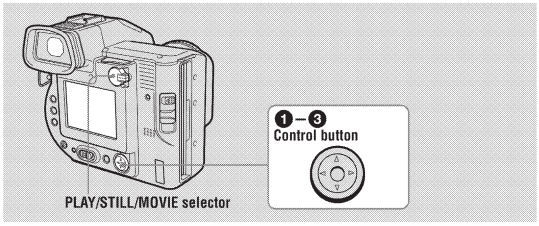
❷ **Press the center ● to enter the item.**
Repeat steps ❶ and ❷ to execute each function.



The "Advanced operations" section of this manual refers to selecting and entering items by the above procedure as "Select [item name]."

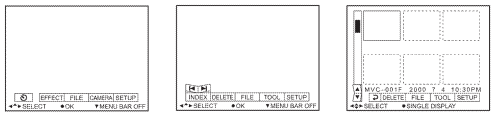
How to change the menu settings

Some of the advanced operations for your camera are executed by selecting menu items displayed on the LCD screen or on the finder with the control button.

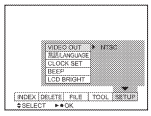


❶ **Press ▲ on the control button to display the menu bar.**
The menu bar appears as follows according to the position of the PLAY/STILL/MOVIE selector.

MOVIE/STILL **PLAY (single mode)** **PLAY (INDEX mode)**



❷ **Select the desired item with ▲/▼/◀/▶ on the control button, then press the center ●.**
The color of the selected item changes from blue to yellow, and when you press the center ●, the settings that can be set for its item are displayed.



❸ **Select the desired setting with ▲/▼/◀/▶ on the control button, then press the center ●.**

To cancel the setup

Press ▼ on the control button repeatedly until the LCD screen or on the finder returns to the menu bar display in step ❶. To clear the menu bar, press ▼ again.

Menu settings

Menu items that can be modified differ depending on the position of the PLAY/STILL/MOVIE selector. The LCD screen or finder shows only the items you can operate at the moment. Initial settings are indicated with ■.

(self-timer)

Records with the self-timer (page 19).

EFFECT

Item	Setting	Description	PLAY/STILL/ MOVIE selector
P. EFFECT	SOLARIZE B&W SEPIA NEG.ART ■ OFF	Sets the image special effects (page 43).	MOVIE STILL
DATE/ TIME	DAY & TIME DATE ■ OFF	Sets whether to insert the date and time into the image (page 43).	STILL

FILE

Item-1	Item-2	Setting	Description	PLAY/STILL/ MOVIE selector
DISK TOOL	FORMAT	OK CANCEL	Formats a floppy disk (page 54). Cancels formatting of a floppy disk.	MOVIE STILL PLAY
	DISK COPY	OK CANCEL	Copies all data stored in a floppy disk to another disk (page 52). Cancels the disk copy.	
	CANCEL		Goes back to the [DISK TOOL] item.	

Item	Setting	Description	PLAY/STILL/ MOVIE selector
FILE NUMBER	SERIES ■ NORMAL	Assigns numbers to files in sequence even if the floppy disk is changed. Resets the file number that starts from 001 each time the floppy disk is changed.	MOVIE STILL

Item	Setting	Description	PLAY/STILL/ MOVIE selector
IMAGE SIZE	■ 1600×1200 1600(3:2) 1600 (ECM) 1024×768 640×480	Selects the image size when recording still images.	STILL
	320×240 ■ 160×112	Selects the MPEG image size when recording moving images.	MOVIE
REC MODE	TEXT	Records a GIF file in black-and-white.	STILL
	VOICE	Records an audio file (with a still image) in addition to the JPEG file.	
	E-MAIL	Records a small-size (320×240) JPEG file in addition to the selected image size.	
	■ NORMAL	Records a JPEG file in the selected image size.	
REC TIME SET	15 sec 10 sec ■ 5 sec	Selects the recording time for moving images.	MOVIE
SLIDE SHOW (Only in PLAY (single) mode)	INTERVAL	Sets the slide show interval. ■ 3 sec/5 sec/10 sec/30 sec/1 min	PLAY
	REPEAT	A slide show can be repeated for up to approx. 20 minutes. ■ ON/OFF	
	START	Starts the slide show.	
	CANCEL	Cancels the slide show settings or execution.	
PRINT MARK	—	Marks the images to be printed (page 53).	PLAY
PROTECT	—	Protects images against accidental erasure (page 48).	PLAY

CAMERA

Item	Setting	Description	PLAY/STILL/ MOVIE selector
DIGITAL ZOOM	■ ON OFF	Uses digital zoom. Does not use digital zoom.	STILL
SHARPNESS	+2 to –2	Adjusts the sharpness of the image. The ◫ indicator appears (except when the setting is 0).	STILL
FLASH LEVEL	HIGH ■ NORMAL LOW	Makes the flash level higher than normal. Normal setting. Makes the flash level lower than normal.	STILL
EXPOSURE	+2.0EV to –2.0EV	Adjusts the exposure.	MOVIE STILL

TOOL

Item	Setting	Description	PLAY/STILL/ MOVIE selector
COPY	OK ■ CANCEL	Copies the images (page 50). Cancels copying of the image.	PLAY
RESIZE (Only in PLAY (single) mode)	1600×1200 1024×768 640×480 ■ CANCEL	Changes the recorded image size (page 50).	PLAY

SETUP

Item	Setting	Description	PLAY/STILL/ MOVIE selector
DEMO	■ STBY/ON OFF	Displayed only when you use the AC power adaptor in MOVIE or STILL mode. When [ON] is selected, a demonstration will start if you do not operate your camera for about 10 minutes. To stop the demonstration, turn off your camera.	MOVIE STILL
VIDEO OUT	■ NTSC PAL	Sets the video output signal to NTSC mode (e.g., Japan, the USA). Sets the video output signal to PAL mode (e.g., Europe).	MOVIE STILL PLAY

Item	Setting	Description	PLAY/STILL/ MOVIE selector
言語 / LANGUAGE	日本語 /JPN ■ ENGLISH	Displays the menu items in Japanese. Displays the menu items in English.	MOVIE STILL PLAY
CLOCK SET	----	Sets the date and time. (page 12)	MOVIE STILL PLAY
BEEP	SHUTTER ■ ON OFF	Turns off the beep only. (The shutter sound is heard when you press the shutter button.) Turns on the beep/shutter sound (when you press the control button/shutter button). Turns off the beep/shutter sound.	MOVIE STILL PLAY
LCD BRIGHT	▮▮▮▮▮▮▮▮▮	Adjusts the LCD screen brightness using +/- on the LCD screen.	MOVIE STILL PLAY

INDEX (Only in PLAY (single) mode)

Displays six images at a time (PLAY (INDEX) mode).

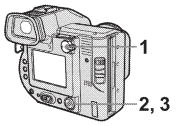
DELETE (Only in PLAY (single) mode)

Setting	Description	PLAY/STILL/MOVIE selector
OK	Deletes the displayed image.	PLAY
CANCEL	Cancels deleting of the image.	

⮌ (Return) (Only in PLAY (INDEX) mode)

Returns to PLAY (single) mode.

Setting the image size (IMAGE SIZE)



1 Set the PLAY/STILL/MOVIE selector to MOVIE or STILL.

2 Select [FILE] and then [IMAGE SIZE] from the menu.

3 Select the desired image size.

Still image sizes:
1600×1200, 1600 (3:2)*, 1600 (ECM), 1024×768, 640×480

* The image is recorded in the ratio of three to two to fit the printing paper size.

Moving image sizes:
320×240, 160×112

The number of images or the time that you can record on a floppy disk

Image size	Number of images or time*
1600×1200	Approx. 4 (20)
1600 (3:2)	Approx. 4 (20)
1600 (ECM)	Approx. 8 (40)
1024×768	Approx. 10 (52)
640×480	Approx. 30 (159)
320×240	Approx. 15 sec (1 min 25 sec)
160×112	Approx. 60 sec (5 min 45 sec)

Numbers in parentheses indicate the number or time when you use the "Memory Stick" (8 MB) (not supplied).

* When [REC MODE] is set to [NORMAL].

When you select [1600 (ECM)]

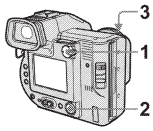
The image quality deteriorates, however, the number of images you can record increases. If you give priority to the image quality, select [1600×1200].

Notes

- If you try to record 55 images or more on a floppy disk, even if the remaining disk capacity is sufficient, "DISK FULL" appears on the LCD screen and you cannot record any more images.
- In TEXT mode, even if you select [1600 (ECM)], the number of images you can record is equal with the number in [1600×1200].

Recording still images for e-mail (E-MAIL)

The E-MAIL mode records a small-size (320×240) image at the same time as a still image. Small-size images are convenient for e-mail transmission, etc.



1 Set the PLAY/STILL/MOVIE selector to STILL.

2 Select [FILE], [REC MODE], and then [E-MAIL] from the menu.

3 Record the image.

The number of images that you can record on a floppy disk in E-MAIL mode

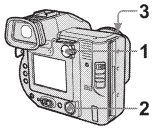
Image size	Number of images
1600×1200	Approx. 3 (19)
1600 (3:2)	Approx. 3 (19)
1600 (ECM)	Approx. 7 (35)
1024×768	Approx. 8 (47)
640×480	Approx. 22 (120)

Numbers in parentheses indicate the number when you use the "Memory Stick" (8 MB) (not supplied).

To return to normal recording mode

Select [NORMAL] in step **2**.

Adding audio files to still images (VOICE)



1 Set the PLAY/STILL/MOVIE selector to STILL.

2 Select [FILE], [REC MODE], and then [VOICE] from the menu.

3 Record the image.
If you press and release the shutter button, sound is recorded for five seconds.
If you hold down the shutter button, sound is recorded until you release the shutter button for up to 40 seconds.

The number of images that you can record on a floppy disk in VOICE mode

Image size	Number of images
1600×1200	Approx. 3 (17)
1600 (3:2)	Approx. 3 (17)
1600 (ECM)	Approx. 5 (30)
1024×768	Approx. 6 (37)
640×480	Approx. 12 (74)

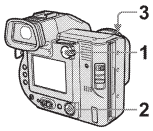
Numbers in parentheses indicate the number when you use the "Memory Stick" (8 MB) (not supplied).

To return to normal recording mode

Select [NORMAL] in step **2**.

Recording text documents (TEXT)

Text is recorded in GIF format to provide a clear image.



1 **Set the PLAY/STILL/MOVIE selector to STILL.**

2 **Select [FILE], [REC MODE], and then [TEXT] from the menu.**

3 **Record the image.**

The number of images that you can record on a floppy disk in TEXT mode

Image size	Number of images
1600×1200	Minimum 4 (25)
1600 (3:2)	Minimum 5 (28)
1600 (ECM)	Minimum 4 (25)
1024×768	Minimum 11 (61)
640×480	Minimum 28 (160)

Numbers in parentheses indicate the number when you use the "Memory Stick" (8 MB) (not supplied).

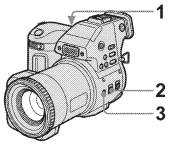
To return to normal recording mode

Select [NORMAL] in step **2**.

Notes

- If the subject is not evenly illuminated, you may be unable to record a clear image.
- Writing and reading data take more time than normal recording.

Recording images in macro



1 **Set the PLAY/STILL/MOVIE selector to MOVIE or STILL.**

2 **Set the FOCUS AUTO/MANUAL switch to AUTO.**

3 **Press (macro).**
The (macro) indicator appears on the LCD screen or on the finder. With the zoom lever set to the W side, you can shoot a subject that is about 2 cm (13/16 inch) away from the lens surface in macro mode.

To return to normal recording mode

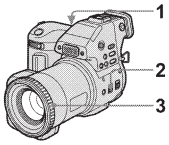
Press again. The indicator disappears.

Notes

- You cannot record images in macro with the following PROGRAM AE modes:
  — Landscape mode
  — Panfocus mode
- You cannot record images in macro if the indicator appears.

Focusing manually

Normally the focus is automatically adjusted. The manual focus function is convenient to focus the subject under dark situations.



1 **Set the PLAY/STILL/MOVIE selector to MOVIE or STILL.**

2 **Set the FOCUS AUTO/MANUAL switch to MANUAL.**
The (manual focus) indicator appears on the LCD screen or on the finder.

3 **Turn the focus ring to achieve a sharp focus.**
When you shoot still images, the image on the LCD screen or on the finder is enlarged (double*) and the focal point information appears while the focus is being adjusted. After adjusting, the image returns to normal size. The range is from 2 cm (13/16 inch) to ∞ (infinity).

* When using the digital zoom function, the enlarged image will be less than double size.

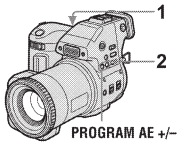
To reactivate auto focusing

Set the FOCUS AUTO/MANUAL switch to AUTO.

Notes

- Focal point information may not completely show the correct distance. Use the information as a guide.
- Focal point information does not show the correct distance when attaching the conversion lens.
- If you shoot a subject within 0.8 m (31 1/2 inches) while the zoom lever is set to T side, you cannot get a clear focus. In such cases, the focal point information flashes. Move the zoom lever to the W side until the indicator stops flashing.
- You cannot adjust the focus manually if you have selected the Panfocus mode in the PROGRAM AE function.

Using the PROGRAM AE function



1 **Set the PLAY/STILL/MOVIE selector to MOVIE or STILL.**

2 **Press PROGRAM AE repeatedly to select the desired PROGRAM AE mode.**

A Aperture priority mode
For making the subject stand out against an unclear background or making both the subject and the background stand out clearly. Press PROGRAM AE +/– repeatedly to select an aperture value in 9 steps from F2.8 to F11.

S Shutter speed priority mode
For recording a sharp picture of a fast-moving subject or recording the flow of motion of a moving subject.
Press PROGRAM AE +/– repeatedly to select a shutter speed in 17 steps from 8" to 1/500 when recording a still image, or in 11 steps from 1/8 to 1/500 when recording a moving image.

Twilight mode
Suppresses the blurring of colors of a bright subject in a dark place so that you can record the subject without losing the dark atmosphere of the surroundings.

Twilight plus mode
Increases the effectiveness of the twilight mode function.

Landscape mode
Focuses only on a distant subject to record landscapes, etc.

Panfocus mode
Changes the focus quickly and simply from a close subject to a distant subject.

To cancel PROGRAM AE

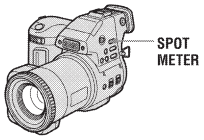
Press PROGRAM AE repeatedly until the indicator on the LCD screen or on the finder goes out.

Notes

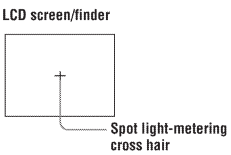
- You can focus only on distant subjects in Landscape mode.
- In Panfocus mode, the zoom position is set to the W side and focus is fixed.
- When you record in Twilight plus mode, we recommend that you use a tripod to prevent shaking.
- Set the forced flash when you use the flash in the following modes:
  — Twilight mode
  — Twilight plus mode
  — Landscape mode
- You cannot use the PROGRAM AE function when [REC MODE] is set to [TEXT].
- If the setting is not appropriate in aperture priority mode and shutter priority mode, the setting value indicator on the LCD screen or on the finder flashes. In this case, reset the value.

Using the Spot light – metering function

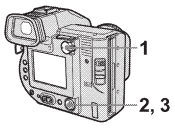
Select this mode when there is backlight or when there is strong contrast between the subject and the background, etc.



Press SPOT METER to activate the spot light-metering function. Position the point you want to record at the spot light-metering cross hair.



Adjusting the exposure (EXPOSURE)



1 **Set the PLAY/STILL/MOVIE selector to MOVIE or STILL.**

2 **Select [CAMERA] and then [EXPOSURE] from the menu.**

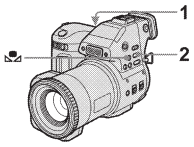
3 **Select the desired exposure value.**
Adjust the exposure value while checking the brightness of the background. You can select values ranging from +2.0 EV to -2.0 EV in steps of 1/3 EV.

Note

If a subject is under extremely bright or dark situations, or the flash is used, the exposure adjustment may not be effective.

Adjusting the white balance (WHITE BALANCE)

Normally the white balance is automatically adjusted.



1 Set the PLAY/STILL/MOVIE selector to MOVIE or STILL.

2 Press WHITE BALANCE repeatedly to select the desired white balance setting.

IN DOOR ( )
- Places where the lighting condition changes quickly
- Under bright lighting such as photography studios
- Under sodium or mercury lamps

OUT DOOR ( )
Recording a sunrise/sunset, night scene, neon signs, or fireworks

One-push white balance ( )
Adjusting the white balance depending on the light source

AUTO (No indicator)
Adjusts the white balance automatically

To shoot in one-push white balance mode

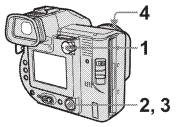
① Press WHITE BALANCE repeatedly until the indicator appears.
② Shoot a white object such as paper full under the same situation you will shoot.
③ Press .
The indicator flashes quickly. When the white balance has been adjusted and stored in the memory, the indicator stops flashing.

To reactivate auto adjustment

Select [AUTO] in step **2**.

Notes
- Select [AUTO] when shooting with fluorescent lighting.
- The indicator means:
  Slow flashing: white balance is not set.
  Quick flashing: white balance is being adjusted (after you pressed).
  Lit steady: white balance has been set.
- If the indicator keeps flashing even when you press , record in automatic white balance mode.

Recording the date and time on the still image (DATE/TIME)



1 Set the PLAY/STILL/MOVIE selector to STILL.

2 Select [EFFECT] and then [DATE/TIME] from the menu.

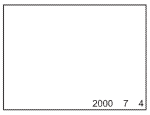
3 Select the date and time.

DAY & TIME
Imposes the date, hour, and minute.

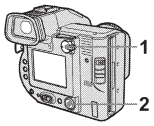
DATE
Imposes the year, month, and day.

OFF
Does not impose the date and time.

4 Record the image.
The date and time do not appear on the LCD screen or on the finder during shooting, these appear during playback only.



Enjoying picture effects (PICTURE EFFECT)



1 Set the PLAY/STILL/MOVIE selector to MOVIE or STILL.

2 Select [EFFECT] and then [P. EFFECT] from the menu.

Select the desired mode.

SOLARIZE
The light contrast is clearer and the picture looks like an illustration.

B&W
The picture is monochrome (black and white).

SEPIA
The picture is sepia-toned like an old photograph.

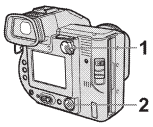
NEG.ART
The color and brightness of the picture are reversed as in a negative.

OFF
Does not use the picture effect function.

To cancel picture effect

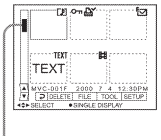
Select [OFF] in step **2**.

Playing back six images at once (INDEX)



1 Set the PLAY/STILL/MOVIE selector to PLAY.

2 Select [INDEX] on the LCD screen.
Six images are displayed at once (index screen).



This shows the position of the currently displayed images relative to all the recorded images.

The following marks are displayed on each image according to the image type and settings.
: Moving image file
: Voice memo file
: E-mail file
: Print mark
: Protect mark
TEXT: TEXT file
(No mark): Normal recording (no settings)

To display the next (previous) index screen

Select ▲/▼ at the lower left on the LCD screen or on the finder.

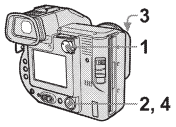
Displays the previous index screen.
Displays the next index screen.

To return to normal playback (single image)

- Select the desired image with the control button.
- Select (Return).

Note
Images shot in TEXT mode cannot be displayed on the INDEX screen.

Enlarging a part of the still image (Zoom and trimming)



1 Set the PLAY/STILL/MOVIE selector to PLAY.

2 Display the image to be enlarged.

3 Zoom in/out the image with the zoom lever.
The zoom scaling indicator appears on the LCD screen or on the finder.

4 Press the control button repeatedly to trim the image.
▲: The image moves downward
▼: The image moves upward
◄: The image moves rightward
►: The image moves leftward

To return to the normal size

Zoom out with the zoom lever until the zoom scaling indicator (×1.1) disappears from the screen, or simply press the center ●.

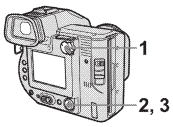
To record an enlarged image (trimming)

① Enlarge the image.
② Press the shutter button. The image is recorded at 640×480 size and the image on the LCD screen or on the finder returns to the normal size after recording.

Notes
- You cannot use this function on moving images or TEXT mode images.
- Zoom scaling is up to 5× regardless of the original image size.
- The quality of enlarged images may be deteriorated.
- The original data is left even if you enlarge the image.
- The enlarged image is recorded as the newest file.

Playing back the still images in order (SLIDE SHOW)

This function is useful for checking the recorded images or for presentations, etc.



1 **Set the PLAY/STILL/MOVIE selector to PLAY.**

2 **Select [FILE] and then [SLIDE SHOW] from the menu.**
Set the following items.

INTERVAL
You can select from 1 min (one minute), 30 sec (30 seconds), 10 sec (10 seconds), 5 sec (5 seconds), or 3 sec (3 seconds).

REPEAT
ON: Plays back images in a continuous loop (approximately 20 minutes) until [RETURN] is selected.
OFF: After all images have been played back, the slide show ends.

3 **Select [START] with the control button.**
The slide show begins.

To cancel the slide show

Select [CANCEL] in step **2** or **3**.

To skip to the next/previous image during the slide show

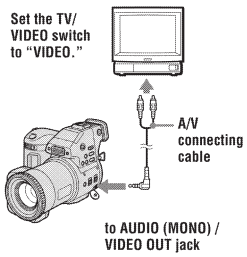
Select ⏮/⏭ at the lower-left on the screen.

Notes

- The interval setting time may vary depending on the image size.
- When [REPEAT] is set to [ON], the slide show does not end until all the images played back, even if it takes more than 20 minutes.

Viewing images on a TV screen

Before connecting your camera, be sure to turn off the TV.



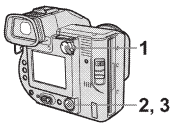
1 **Connect the A/V connecting cable to the AUDIO (MONO) / VIDEO OUT jack of your camera and to the audio/ video input jacks of the TV.**
If your TV has stereo type input jacks, connect the audio plug of the A/V connecting cable to the Lch jack.

2 **Turn on the TV and start playback on your camera.**
The playback image appears on the TV screen.

Note
You cannot use a TV that has an antenna (aerial) connector only.

Preventing accidental erasure (PROTECT)

The 🔑 (protect) indicator appears on protected images.



In single mode

1 **Set the PLAY/STILL/MOVIE selector to PLAY, then display the image to be protected.**

2 **Select [FILE], [PROTECT], and then [ON] from the menu.**
The displayed image is protected and the 🔑 indicator appears.

To release protection

Select [OFF] in step **2**.

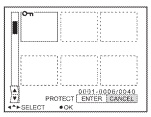
In INDEX mode

1 **Set the PLAY/STILL/MOVIE selector to PLAY, then display the INDEX screen.**

2 **Select [FILE], [PROTECT], and then [ALL] or [SELECT] from the menu.**

3 **When you select [ALL]**
Select [ON].
All the images in the floppy disk are protected.

When you select [SELECT]
Select all the images to be protected with the control button, then select [ENTER]. The selected images are protected.

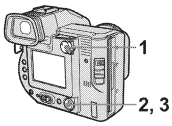


To release protection

If you selected [ALL] in step **2**, select [OFF]. If you selected [SELECT] in step **2**, select the images to be unprotected with the control button, then select [ENTER].

Deleting images (DELETE)

Protected images cannot be deleted.



In single mode

1 **Set the PLAY/STILL/MOVIE selector to PLAY, then display the image to be deleted.**

2 **Select [DELETE] and then [OK] from the menu.**
The image is deleted.

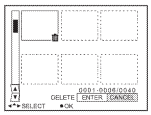
In INDEX mode

1 **Set the PLAY/STILL/MOVIE selector to PLAY, then display the INDEX screen.**

2 **Select [DELETE] and then [ALL] or [SELECT] from the menu.**

3 **When you select [ALL]**
Select [ENTER].
All the unprotected images are deleted.

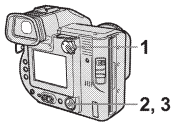
When you select [SELECT]
Select all the images to be deleted with the control button, then select [ENTER]. The 🗑 (delete) indicator appears on the selected images and these images are deleted.



To cancel deleting

Select [CANCEL] in step **2** or **3**.

Changing the recorded still image size (RESIZE)



1 **Set the PLAY/STILL/MOVIE selector to PLAY, then display the image of which you want to change the size.**

2 **Select [TOOL] and then [RESIZE] from the menu.**

3 **Select the desired size.**
1600×1200, 1024×768, 640×480.
The resized image is recorded and the image on the LCD screen or on the finder returns to the previous size after recording.

To cancel changing the size

Select [CANCEL] in step **3**.

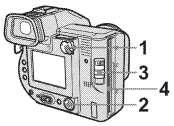
Notes

- When you change from a small size to a large size, the picture quality deteriorates.
- The original image is retained even after resizing.
- You cannot change the size of images recorded in TEXT mode or moving pictures.
- The resized image is recorded as the newest file.

Copying images (COPY)

Copies images to another floppy disk.

In single mode



1 **Set the PLAY/STILL/MOVIE selector to PLAY, then display the image to be copied.**

2 **Select [TOOL], [COPY], and then [OK] from the menu.**
"DISK ACCESS" appears.

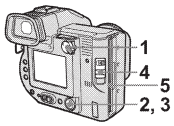
3 **When "CHANGE FLOPPY DISK" appears, eject the floppy disk.**
"INSERT FLOPPY DISK" appears.

4 **Insert another floppy disk.**
"RECORDING" appears. When copying is completed, "COMPLETE" appears.
To end copying, select [EXIT].

To continue copying the image to other floppy disks

After "COMPLETE" appears in step **4**, select [CONTINUE] and repeat steps **3** and **4** above.

In INDEX mode



1 **Set the PLAY/STILL/MOVIE selector to PLAY, then display the INDEX screen.**

2 **Select [TOOL], [COPY], and then [ALL] or [SELECT] from the menu.**

3 **When you select [ALL]**
Select [OK].
All the images are copied.

When you select [SELECT]
Select the images to be copied with the control button.
The ✓ mark appears on the images.
Select all the images to be copied, then select [ENTER].
"DISK ACCESS" appears.

4 **When "CHANGE FLOPPY DISK" appears, eject the floppy disk.**
"INSERT FLOPPY DISK" appears.

5 **Insert another floppy disk.**
"RECORDING" appears. When copying is completed, "COMPLETE" appears.
To end copying, select [EXIT].

To continue copying the image to other floppy disks

After "COMPLETE" appears in step **5**, select [CONTINUE] and repeat steps **4** and **5** above.

To cancel copying part-way

Change the PLAY/STILL/MOVIE selector position or turn off the power.

Note

If you eject and insert the floppy disk without selecting [EXIT] after "COMPLETE" appears, the image will be copied to the floppy disk.

Notes on the Floppy Disk Adaptor for Memory Stick

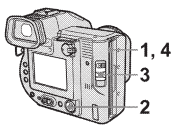
- You cannot select [ALL] when copying images in the "Memory Stick."
- You cannot copy images from a floppy disk to a "Memory Stick."
- When copying from a "Memory Stick" to a floppy disk, the file information (Exif tag) is not copied.

Copying all the information on your floppy disk (DISK COPY)

You can copy to another disk not only the images you have recorded with your camera but also various files you have created in other software with your personal computer.

Notes

- With copying disk, all information saved on the recipient floppy disk is erased to be replaced by newly written data including the protected image data. Check the contents of the recipient disk before copying disk.
- Be sure to use a formatted floppy disk to carry out DISK COPY.



1 **Insert the floppy disk to be copied.**

2 **Select [FILE], [DISK TOOL], [DISK COPY], and then [OK] from the menu.**
"DISK ACCESS" appears.

3 **When "CHANGE FLOPPY DISK" is displayed, eject the floppy disk.**
"INSERT FLOPPY DISK" appears.

4 **Insert another floppy disk.**
"RECORDING" appears. When copying is completed, "COMPLETE" appears.
To end copying, select [EXIT].

To continue copying the image to other floppy disks

After "COMPLETE" appears in step **4**, select [CONTINUE] and repeat steps **3** and **4** above.

To cancel copying part-way

Change the PLAY/STILL/MOVIE selector position or turn off the power.

Note

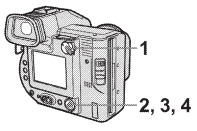
If you eject and insert the floppy disk without selecting [EXIT] after "COMPLETE" appears, DISK COPY will be carried out onto the floppy disk.

Note on the Floppy Disk Adaptor for Memory Stick

You cannot do DISK COPY between "Memory Stick"s and floppy disks.

Selecting still images to print (PRINT MARK)

You can mark a print mark on still images recorded with your camera. This mark is convenient when you have images printed at a shop that conforms with the DPOF (Digital Print Order Format) standard.



In single mode

1 **Set the PLAY/STILL/MOVIE selector to PLAY and display the image you want to print.**

2 **Select [FILE], [PRINT MARK], and then [ON] from the menu.**
The 🖹✓ (print) mark is marked on the displayed image.

To remove the print mark

Select [OFF] in step **2**.

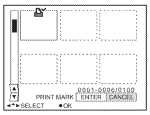
In INDEX mode

1 **Set the PLAY/STILL/MOVIE selector to PLAY, then display the INDEX screen.**

2 **Select [FILE], [PRINT MARK], and then [SELECT] from the menu.**

3 **Select the images to be marked with the control button.**

4 **Select [ENTER].**
The 🖹✓ marks on the selected images change from green to white.



To remove selected print marks

Select the images to be removed in step **3** with the control button, then select [ENTER].

To remove all the print marks

Select [FILE], [PRINT MARK], [ALL], and then [OFF] from the menu.
The 🖹✓ marks on all images are removed.

To print out using the FVP-1 Mavica Printer

Set PRESET SELECT SW to PC on the printer.

Note

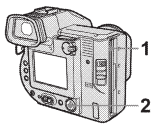
You cannot mark a print mark on moving images or TEXT mode images.

Format

When you format a floppy disk, all data stored on the floppy disk will be deleted. Check the contents of the floppy disk before formatting.

Note

Even if images are protected, these images will be deleted.



1 Insert the floppy disk you want to format.

2 Select [FILE], [DISK TOOL], [FORMAT], and then [OK] from the menu.

To cancel formatting

Select [CANCEL] in step **2**.

Notes

- When you format the disk, be sure to use a fully charged battery pack or the AC power adaptor as the power source.
- If you use the Floppy Disk Adaptor for Memory Stick, you can format "Memory Stick"s.

Precautions

On cleaning

Cleaning the LCD screen or finder

Wipe the screen surface with a cleaning cloth (not supplied) or an LCD cleaning kit (not supplied) to remove fingerprints, dust, etc.

Cleaning the camera surface

Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface dry. Do not use any type of solvent such as thinner, alcohol or benzene as this may damage the finish or the casing.

After using your camera at the seashore or other dusty locations

Clean your camera carefully. Otherwise, the salty air may corrode the metal fittings or dust may enter the inside of your camera, causing a malfunction.

On floppy disks

To protect data recorded on floppy disks, note the following:

- Avoid storing floppy disks near magnets or magnetic fields such as those of speakers and televisions, permanent erasure of disk data may result.
- Avoid storing floppy disks in areas subject to direct sunlight or sources of high temperature, such as a heating device. Floppy disk warping or damage may result, rendering the disk useless.
- Avoid contact with the disk's surface by opening the disk shutter plate. If the disk's surface becomes blemished, data may be rendered unreadable.
- Avoid getting liquids on the floppy disk.
- Be sure to use a floppy disk case to ensure protection of important data.
- Even when you use a 3.5 inch 2HD floppy disk, image data may not be recorded and/or displayed depending on the using environment. In this case, use an other brand of disks.

On operating temperature

Your camera is designed for use between the temperatures of 0 °C to 40 °C (32 °F to 104 °F). Recording in extremely cold or hot places that exceed this range is not recommended.

On moisture condensation

If the camera is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside or outside the camera. Should this occur, the camera will not operate properly.

Moisture condensation occurs easily when:

- The camera is brought from a cold location such as a ski slope into a warmly heated room.
- The camera is taken from an air-conditioned room or car interior to the hot outdoors, etc.

How to prevent moisture condensation

When bringing the camera from a cold place to a warm place, seal the camera in a plastic bag and allow it to adapt to conditions at the new location over a period of time (about an hour).

If moisture condensation occurs

Immediately eject the floppy disk, then turn off the camera and wait about an hour for the moisture to evaporate. Note that if you attempt to record with moisture remaining inside the lens, you will be unable to record clear images.

On AC power adaptor

- Unplug the unit from the wall outlet (mains) when you are not using the unit for a long time. To disconnect the power cord (mains lead), pull it out by the plug. Never pull the power cord (mains lead) itself.
- Do not operate the unit with a damaged cord (mains lead) or if the unit has been dropped or damaged.
- Do not bend the power cord (mains lead) forcibly, or place a heavy object on it. This will damage the cord (mains lead) and may cause fire or electrical shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM receivers and video equipment disturb AM reception and video operation.
- The unit becomes warm during use. This is not a malfunction.
- Do no place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

On battery pack

- Use only the specified charger with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60 °C (140 °F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Attach the battery pack to the camera securely.
- Charging while some capacity remains does not affect the original battery capacity.

On vanadium-lithium battery

Your camera is supplied with a vanadium-lithium battery installed so as to retain the date and time, etc., regardless of the setting of the POWER switch. The vanadium-lithium battery is always charged as long as you are using your camera. The battery, however, will get discharged gradually if you do not use your camera. It will be completely discharged in about six months if you do not use your camera at all. Even if the vanadium-lithium battery is not charged, it will not affect the camera operation. To retain the date and time, etc., charge the battery if the battery is discharged.

Charging the vanadium-lithium battery:

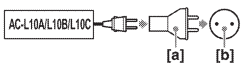
- Connect your camera to house current (mains) using the AC power adaptor supplied with your camera, and leave your camera with the power turned off for more than 24 hours.
- Or install the fully charged battery pack in your camera, and leave your camera with the power turned off for more than 24 hours.

If any problem occurs, unplug your camera and contact your nearest Sony dealer.

Using your camera abroad

Power sources

You can use your camera in any country or area with the supplied battery charger within 100 V to 240 V AC, 50/60 Hz. Use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet (mains) **[b]**.



Watching the playback picture on TV

If you want to view the playback picture on a TV, you need a TV having a video input jack and a video connecting cable.

The color system of the TV must be the same as that of your digital still camera. TV color systems differ from country to country. Check the following list:

NTSC system countries

Bahama Islands, Bolivia, Canada, Central America, Chile, Columbia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system countries

Australia, Austria, Belgium, China, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system country

Brazil

PAL-N system countries

Argentina, Paraguay, Uruguay

SECAM system countries

Bulgaria, Czech Republic, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Slovak Republic, Ukraine, etc.

Troubleshooting

If you experience trouble with your camera, first check the following items. Should your camera still not operate properly after you have made these checks, consult your Sony dealer or local authorized Sony service facility. If code displays (C:□□:□□) appear on the LCD screen or on the finder, the self-diagnosis display function is working (page 63).

Symptom	Cause and/or Solution
Your camera does not work.	• You are not using an "InfoLITHIUM" battery pack. → Use an "InfoLITHIUM" battery pack (page 8). • The floppy disk is not inserted properly. → Eject the disk, and insert it again (page 14). • The battery level is too low. (The indicator appears.) → Charge the battery pack (page 9). • The AC power adaptor is not connected securely. → Connect it securely to the DC IN jack and a wall outlet (mains) (page 9, 11). • The malfunction occurs inside the camera. → Turn off the power, and turn on after one minute, then check that the camera works properly.
Your camera cannot record images.	• The PLAY/STILL/MOVIE selector is set to PLAY. → Set it to MOVIE or STILL (page 15, 21). • No floppy disk has been inserted into your camera. → Insert a floppy disk (page 14). • The tab on the disk is set to the non-recording position. → Set it to the recording position (page 14).
The picture is noisy.	• Your camera is placed near a TV or other equipment that uses strong magnets. → Move your camera away from the TV, etc.
The picture is too dark.	• You are shooting a subject with a light source behind the subject. → Adjust the exposure (page 41). • The brightness of the LCD screen is too low. → Adjust the brightness of the LCD screen (page 16).

Symptom	Cause and/or Solution
The flash does not work.	• The flash is set to . → Set the flash to (no indication), , or (page 19). • The camera is in one of the following PROGRAM AE modes: Twilight, Twilight plus, or Landscape. → Cancel the PROGRAM AE function or set the flash to (page 19, 40). • The PLAY/STILL/MOVIE selector is set to MOVIE. → Set it to STILL. • The flash is not popped up. → Pop up the flash (page 19).
The read/write time is slow when using a "Memory Stick."	• When using the Floppy Disk Adaptor for Memory Stick, writing and reading images take about twice times than using a floppy disk. → This is not a malfunction.
The date and time are recorded incorrectly.	• The date and time are not set correctly. → Set the correct date and time (page 12).
Vertical streaks appear when you are shooting a very bright subject.	• This is called the smear phenomenon. → This is not a malfunction.
The battery life is short.	• You are recording/playing back images under extremely cold temperatures. • The battery pack is not charged enough. → Charge the battery pack fully. • The battery pack is dead. → Replace the battery pack with a new one.
The indication of the battery remaining time is not proper.	• You are using the camera for many hours under extremely hot or cold temperatures. • The battery pack is dead. → Replace the battery pack with a new one (page 8). • The battery level is too low. → Install the charged battery pack (page 8, 9).
The power is immediately turned off even if the battery remaining indicator indicates that the battery level is sufficient.	→ Charge the battery pack about one hour after the normal charge is complete (page 9).
The zoom does not work.	• PROGRAM AE is set to the Panfocus mode. → Cancel the Panfocus mode (page 40).

Symptom	Cause and/or Solution
Digital zoom does not function.	• You cannot use digital zoom to record moving pictures.
The image is in monochrome.	• You shot the image in TEXT mode. → Cancel the TEXT mode (page 38).
The image and sound break off when you play back an image on a personal computer.	• You are playing back the file from the floppy disk. → Copy the file to the hard disk of the personal computer and then play back the file from the hard disk (page 26).
The image cannot be played back on a personal computer.	→ Consult the personal computer or software manufacturer.
Your camera cannot delete an image.	• The image is protected. → Cancel the protection (page 48).
The power turns off suddenly.	• With the PLAY/STILL/MOVIE selector set to STILL or MOVIE, if you do not operate the camera for about three minutes while the power is on, the camera turns off automatically to prevent wearing down the battery pack. → Turn on the camera. • The battery pack is discharged. → Replace it with a charged battery pack.
The image does not appear on the TV screen.	• The VIDEO OUT setting of your camera is incorrect. → Change the setting (page 34).
The slide show function stops automatically.	• The slide show function stops after about 20 minutes. → To continue the slide show, select [START] again (page 46).
You cannot use the PROGRAM AE function.	• The camera is set to TEXT mode. → Cancel the TEXT mode (page 38).
The button does not work.	• The camera is in manual focus mode. → Set it to auto focus mode (page 39). • PROGRAM AE is set to the Panfocus mode. → Cancel the Panfocus mode (page 40).
You cannot resize the image.	• This function does not work on a moving image nor on a TEXT image.
You cannot mark an image with the print mark.	• The print mark cannot be marked on a moving image nor on a TEXT image.

Warning and notice messages

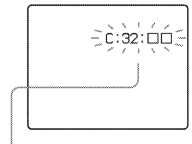
Various messages appear on the LCD screen. Check the corresponding descriptions in the following list.

Message	Meaning
DRIVE ERROR	There is trouble with the disk drive.
NO DISK	No disk has been inserted.
FORMAT ERROR	• The floppy disk loaded is not MS-DOS formatted (512 bytes×18 sectors). • The battery level of the Floppy Disk Adaptor for Memory Stick is low.
DISK PROTECT	The tab on the disk is set to the non-recording position.
DISK FULL	The disk is full.
NO FILE	No image has been recorded on the disk.
FILE ERROR	Trouble has occurred during playback.
FILE PROTECT	The image is protected.
DISK ERROR	A 2DD floppy disk is inserted, or there is trouble with the disk.
NOT ENOUGH MEMORY	The remaining capacity of the floppy disk is not enough to copy the image.
IMAGE SIZE OVER	You tried to play back images with an image size larger than the maximum playback size of this camera.
INVALID OPERATION	• You cannot do DISK COPY between a "Memory Stick" and a floppy disk. • You select [ALL] from [COPY] when copying images in the "Memory Stick."
for "InfoLITHIUM" battery only	The battery is not the "InfoLITHIUM" type.
	The image is protected.
	The battery level is too low.
NOT ENOUGH FD ADAPTOR'S BATTERY	The battery level of the Floppy Disk Adaptor for Memory Stick is low.
COULDN'T RECORD	The battery level of the Floppy Disk Adaptor for Memory Stick is too low to shoot.

Message	Meaning
INVALID OPERATION	The battery level of the Floppy Disk Adaptor for Memory Stick is too low to do some operations.
DISK ERROR	• The battery level of the Floppy Disk Adaptor for Memory Stick is too low to operate. • Trouble has occurred on the Floppy Disk Adaptor for Memory Stick.

Self-diagnosis display

Your camera has a self-diagnosis display. This function displays the camera condition on the LCD screen or on the finder with a combination of a letter and four digits of numbers. If this appears, check the following code chart. The code informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



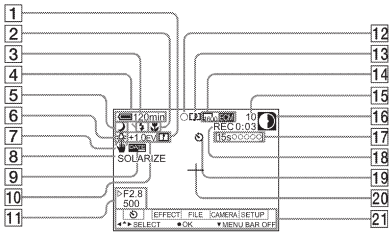
Self-diagnosis display
- C: □□: □□
  You can repair the camera yourself.
- E: □□: □□
  Contact your Sony dealer or local authorized Sony service facility.

Code	Cause and/or Corrective Action
C:32:□□	• There is trouble with the disk drive. →Turn the power off and on again.
C:13:□□	• An unformatted floppy disk is inserted. →Format the floppy disk. (page 54) • An disk not compatible with this camera is inserted. →Change the disk. (page 14) • The battery level of the Floppy Disk Adaptor for Memory Stick is too low. →Replace the battery with a new one.
E:61:□□ E:91:□□	• A camera malfunction that you cannot repair has occurred. →Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit service code. (example: E:61:10)

If you are unable to rectify the problem even if you try corrective actions a few times, contact your Sony dealer or local authorized Sony service facility.

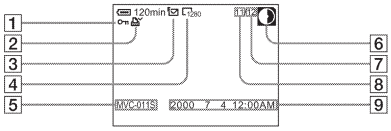
LCD screen/finder indicators

The indicators during recording



1. Sharpness indicator
2. Focus mode indicator/Macro indicator
3. Battery remaining indicator
4. Flash level indicator/Flash mode indicator
5. PROGRAM AE indicator/Zoom indicator
6. White balance indicator
7. SteadyShot indicator
8. Picture effect indicator
9. Date and time indicator
10. EV level indicator
11. Iris/Shutter speed indicator
12. AE lock indicator/Focus lock indicator
13. Recording mode indicator
14. Image size indicator
15. Number of recorded images
16. Remaining disk capacity indicator
17. Recording time indicator
18. Self-diagnosis function indicator/Recording time indicator
19. Self-timer indicator
20. Spot light-metering indicator
21. Menu bar and guide menu
    They appear by pressing ▲ on the control button and disappear by pressing ▼.

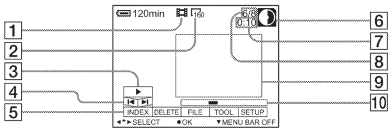
The indicators during still image playback



1. Protect indicator/Zoom scaling indicator
2. Print mark indicator
3. Recording mode indicator
4. Image size indicator
5. File name*
6. Remaining disk capacity indicator
7. Number of stored images on a floppy disk
8. Image number
9. Recording date of the playback image*

* When the menu bar is displayed, this indicator disappears from the screen.

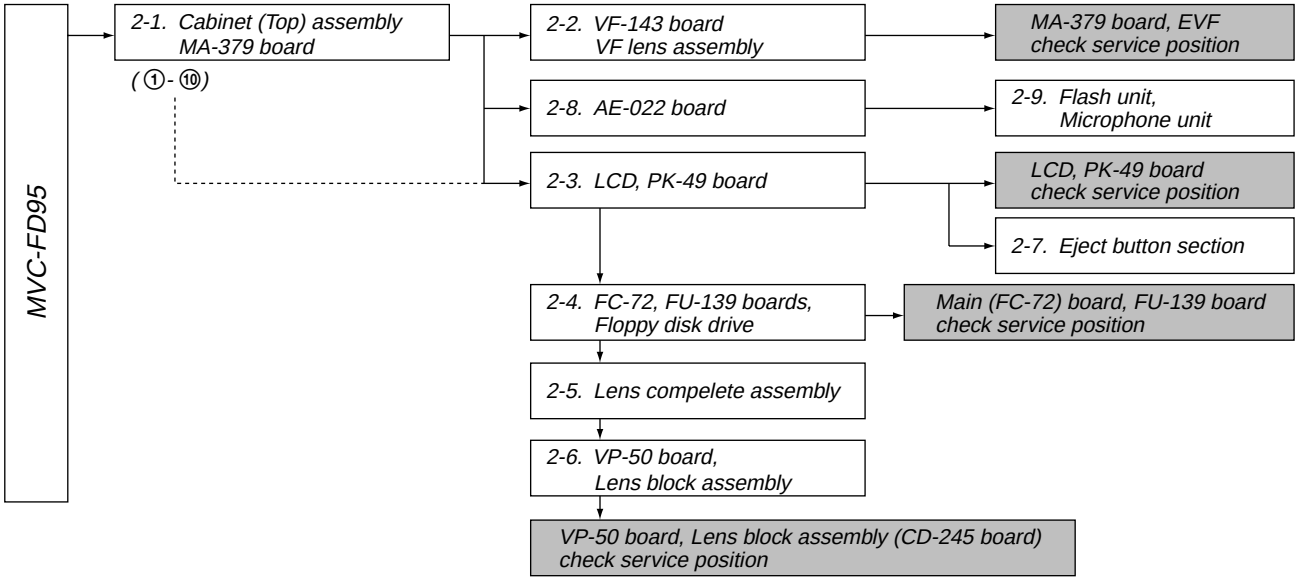
The indicators during moving image playback



1. Moving image file indicator
2. Image size indicator
3. Playback button
   ► is displayed during stop, and ❚❚ during playback.
4. Image searching buttons
5. Menu bar and guide menu
6. Remaining disk capacity indicator
7. Counter
8. Image number/number of stored images on a floppy disk
9. Playback image
10. Playback bar

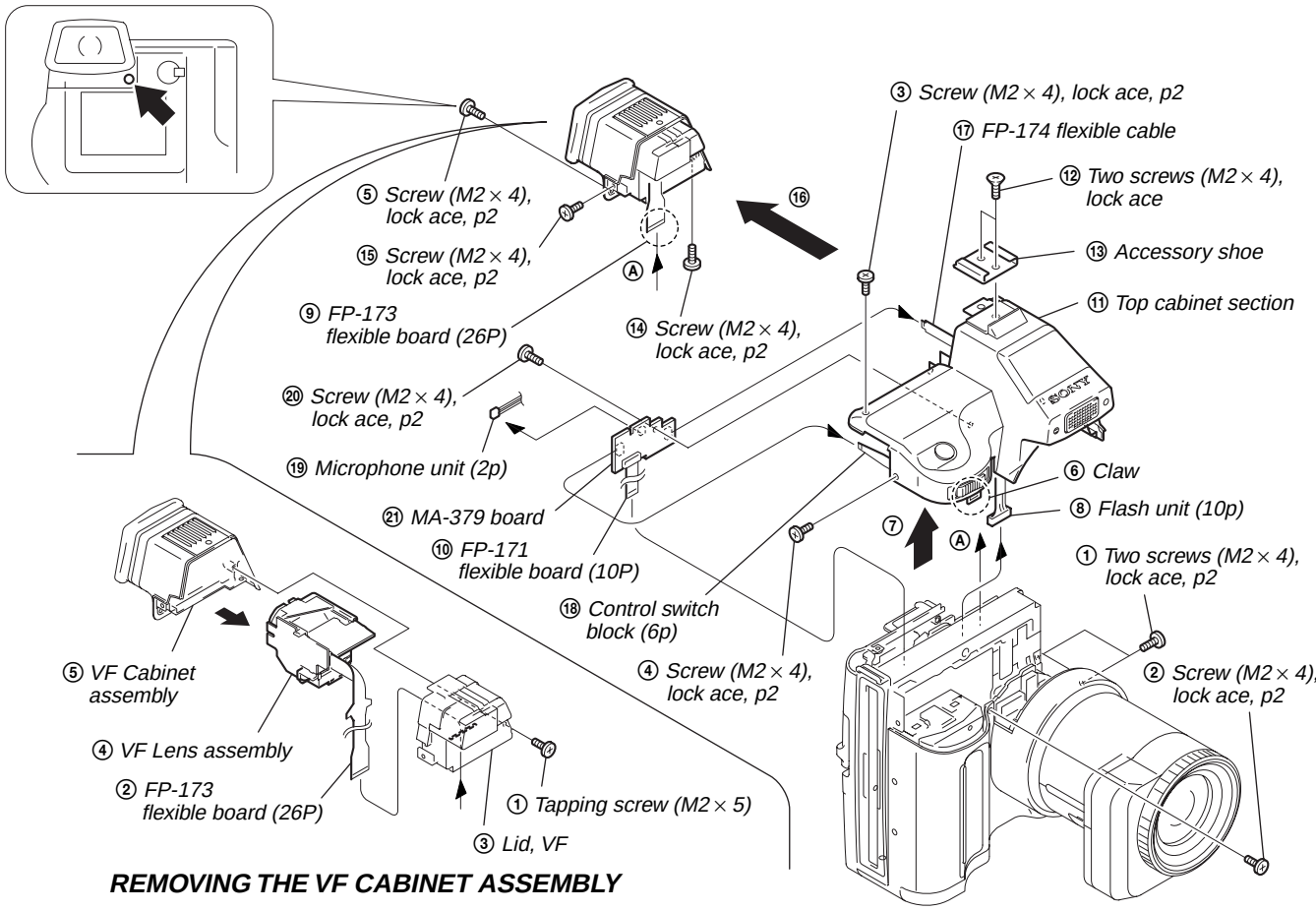
SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.



NOTE: Follow the disassembly procedure in the numerical order given.

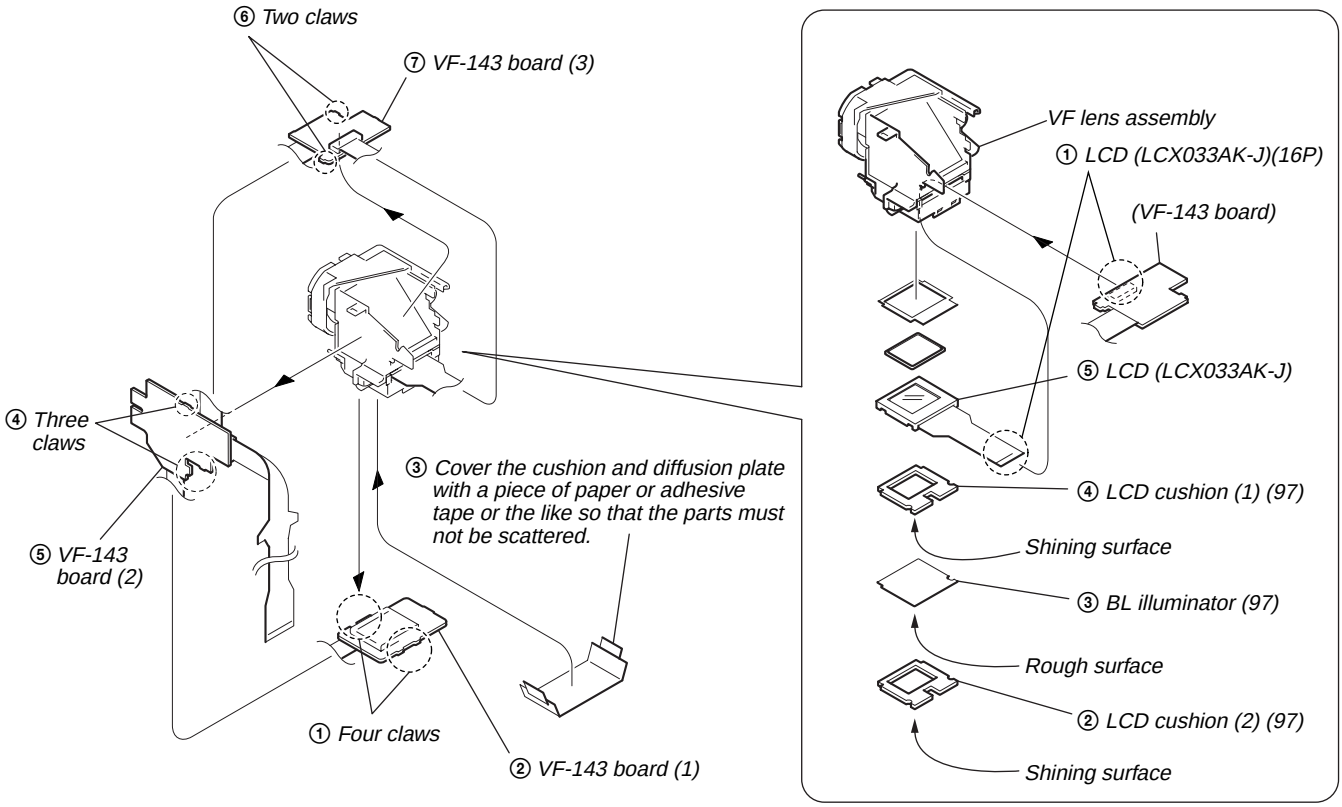
2-1. CABINET (TOP) ASSEMBLY, MA-379 BOARD


③ Screw (M2 × 4), lock ace, p2
⑰ FP-174 flexible cable
⑫ Two screws (M2 × 4), lock ace
⑬ Accessory shoe
⑪ Top cabinet section
⑤ Screw (M2 × 4), lock ace, p2
⑯
⑮ Screw (M2 × 4), lock ace, p2
Ⓐ
⑨ FP-173 flexible board (26P)
⑭ Screw (M2 × 4), lock ace, p2
⑳ Screw (M2 × 4), lock ace, p2
⑲ Microphone unit (2p)
⑥ Claw
⑧ Flash unit (10p)
㉑ MA-379 board
⑩ FP-171 flexible board (10P)
⑦
Ⓐ
① Two screws (M2 × 4), lock ace, p2
⑱ Control switch block (6p)
④ Screw (M2 × 4), lock ace, p2
② Screw (M2 × 4), lock ace, p2
⑤ VF Cabinet assembly
④ VF Lens assembly
② FP-173 flexible board (26P)
① Tapping screw (M2 × 5)
③ Lid, VF

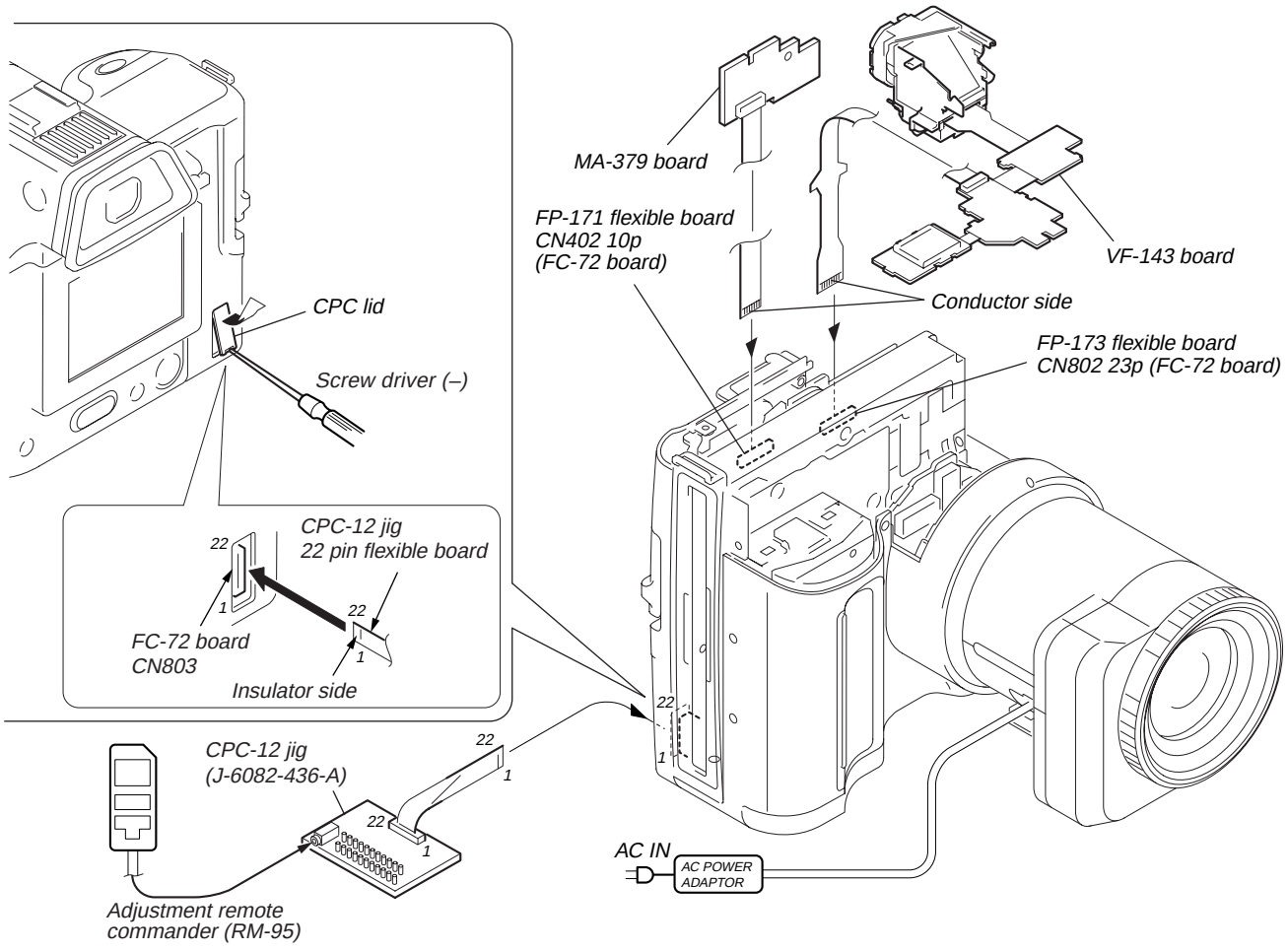
REMOVING THE VF CABINET ASSEMBLY

2-2. VF-143 BOARD, VF LENS ASSEMBLY

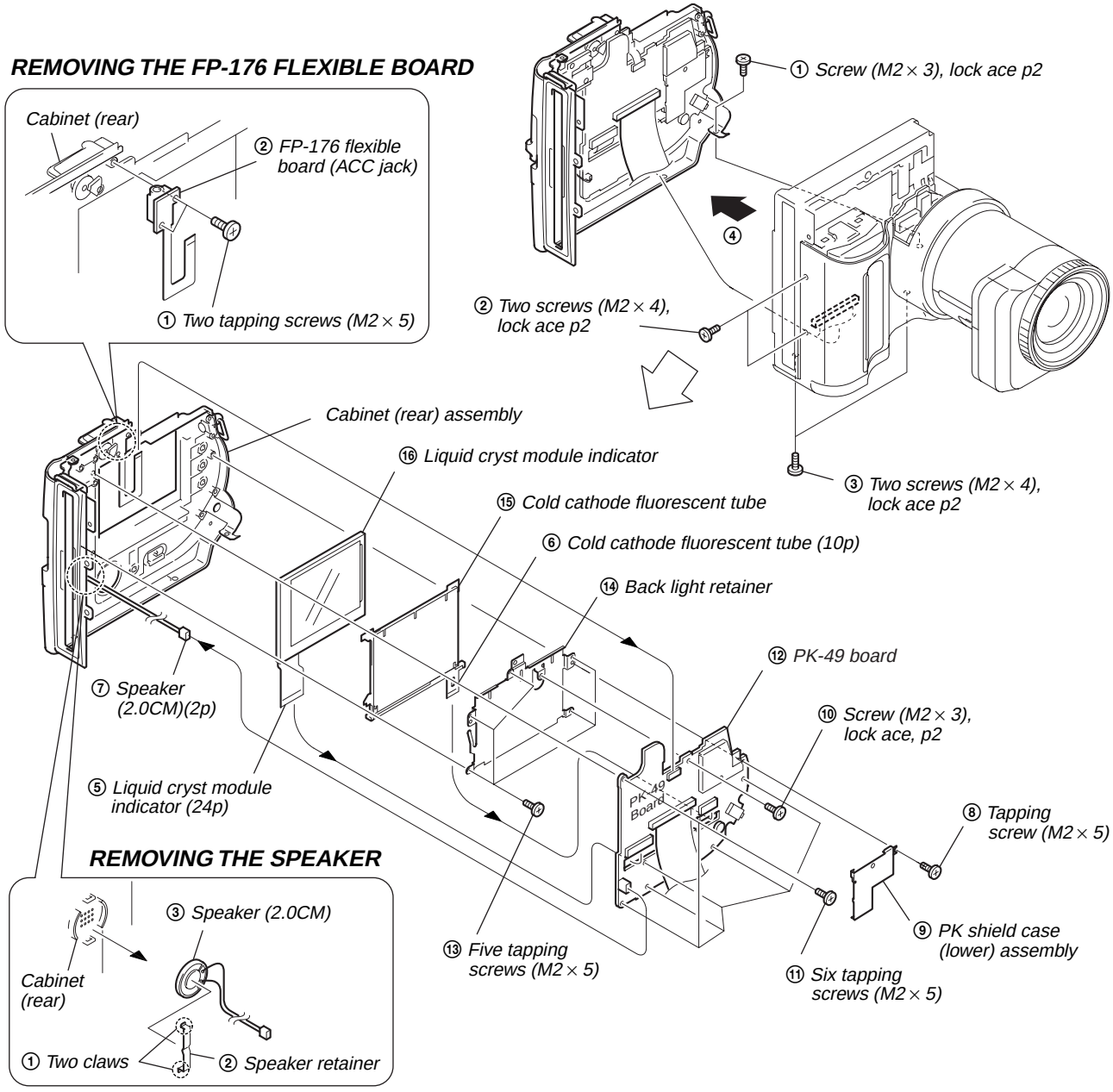
REMOVING THE VF LENS ASSEMBLY


⑥ Two claws
⑦ VF-143 board (3)
④ Three claws
⑤ VF-143 board (2)
③ Cover the cushion and diffusion plate with a piece of paper or adhesive tape or the like so that the parts must not be scattered.
① Four claws
② VF-143 board (1)
VF lens assembly
① LCD (LCX033AK-J)(16P)
(VF-143 board)
⑤ LCD (LCX033AK-J)
④ LCD cushion (1) (97)
Shining surface
③ BL illuminator (97)
Rough surface
② LCD cushion (2) (97)
Shining surface

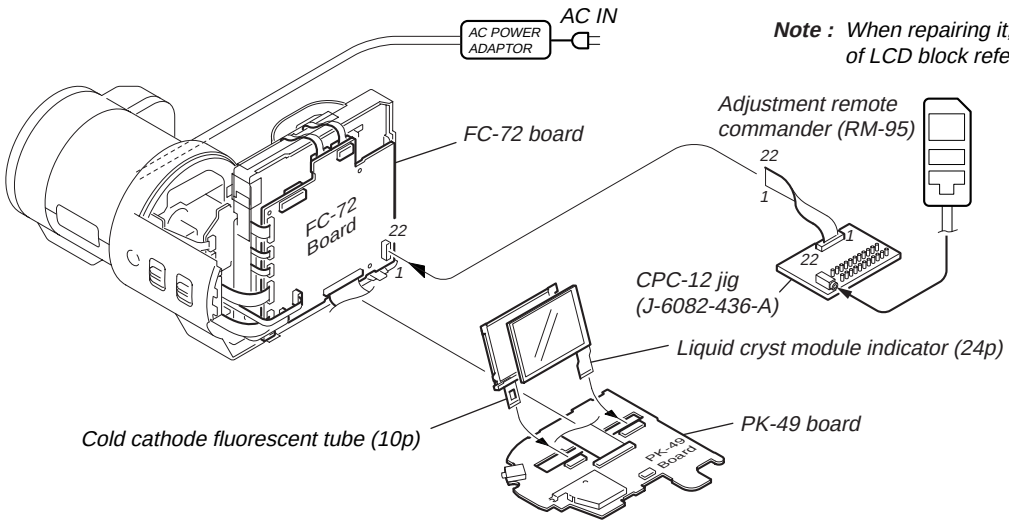
[MA-379 BOARD, EVF CHECK SERVICE POSITION]



2-3. LCD, PK-49 BOARD

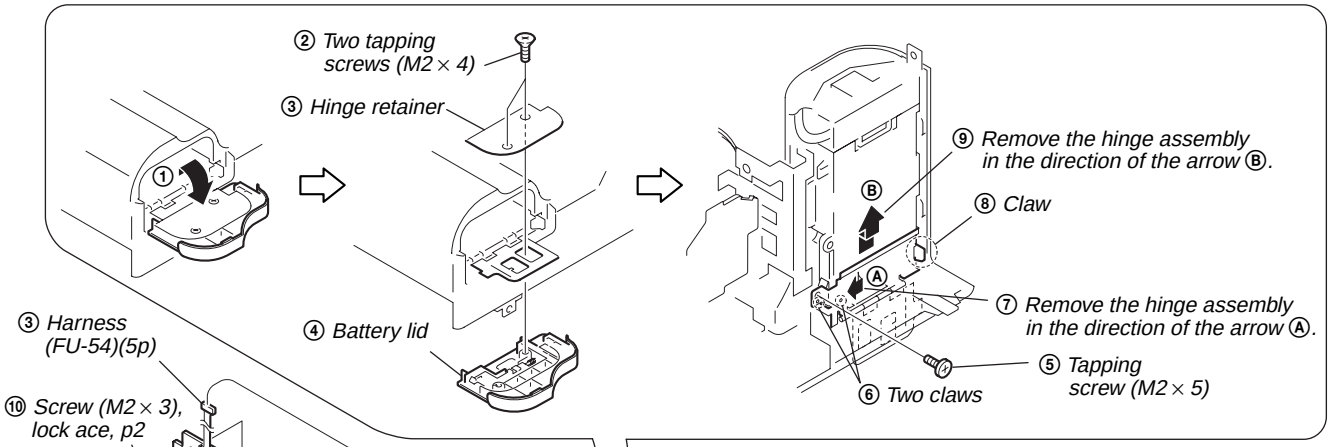

REMOVING THE FP-176 FLEXIBLE BOARD
Cabinet (rear)
② FP-176 flexible board (ACC jack)
① Two tapping screws (M2 × 5)
① Screw (M2 × 3), lock ace p2
④
② Two screws (M2 × 4), lock ace p2
③ Two screws (M2 × 4), lock ace p2
Cabinet (rear) assembly
⑯ Liquid cryst module indicator
⑮ Cold cathode fluorescent tube
⑥ Cold cathode fluorescent tube (10p)
⑭ Back light retainer
⑫ PK-49 board
⑦ Speaker (2.0CM)(2p)
⑩ Screw (M2 × 3), lock ace, p2
⑤ Liquid cryst module indicator (24p)
PK-49 Board
⑧ Tapping screw (M2 × 5)
⑨ PK shield case (lower) assembly
⑬ Five tapping screws (M2 × 5)
⑪ Six tapping screws (M2 × 5)
REMOVING THE SPEAKER
③ Speaker (2.0CM)
Cabinet (rear)
① Two claws
② Speaker retainer

[LCD, PK-49 BOARD CHECK SERVICE POSITION]

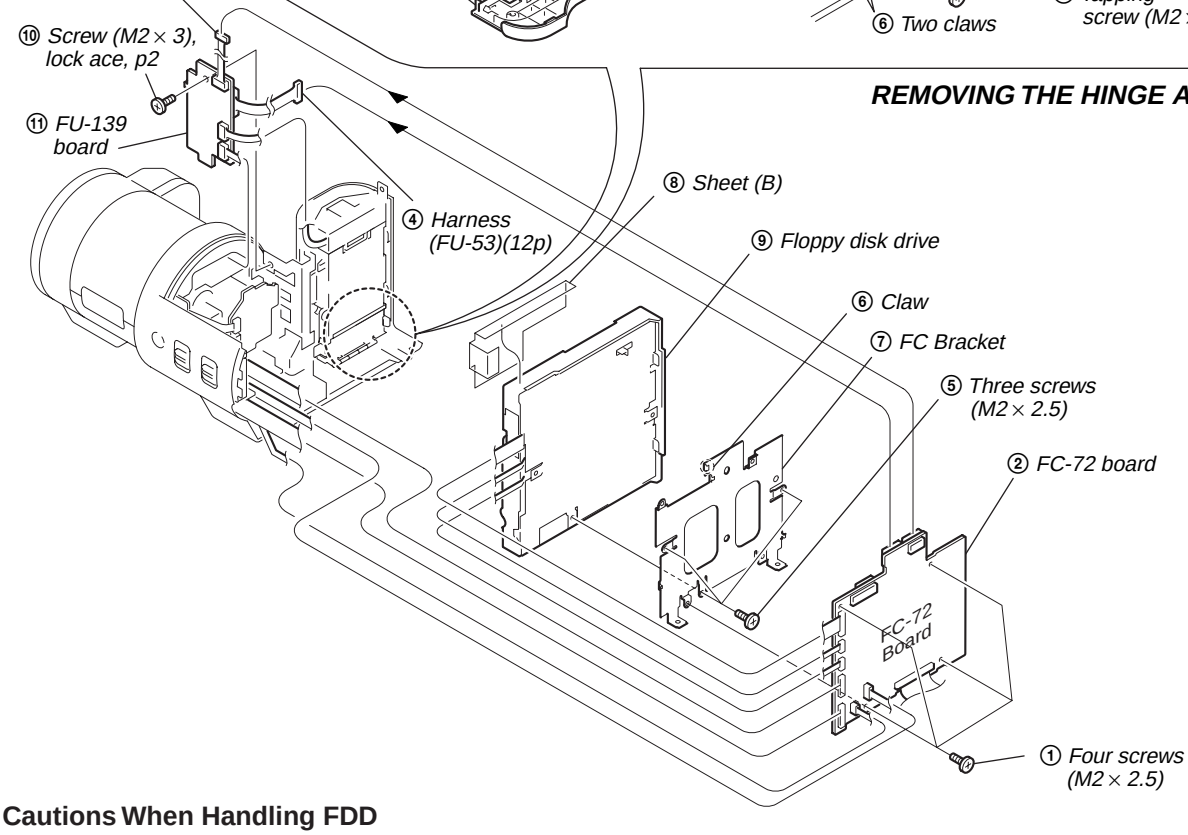


Note : *When repairing it, confirm the type of LCD block referring page 6.*

2-4. FC-72, FU-139 BOARDS, FLOPPY DISK DRIVE

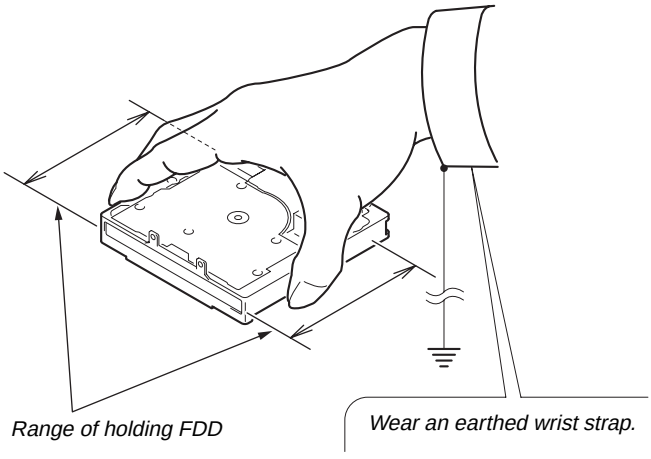

② Two tapping screws (M2 × 4)
③ Hinge retainer
①
④ Battery lid
⑨ Remove the hinge assembly in the direction of the arrow Ⓑ.
Ⓑ
⑧ Claw
Ⓐ
⑦ Remove the hinge assembly in the direction of the arrow Ⓐ.
⑤ Tapping screw (M2 × 5)
⑥ Two claws

REMOVING THE HINGE ASSEMBLY



Cautions When Handling FDD

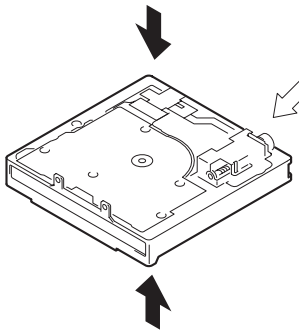
1. Correct Way of Holding an FDD



If the FDD is not held correctly, the components of the FDD may be bent.

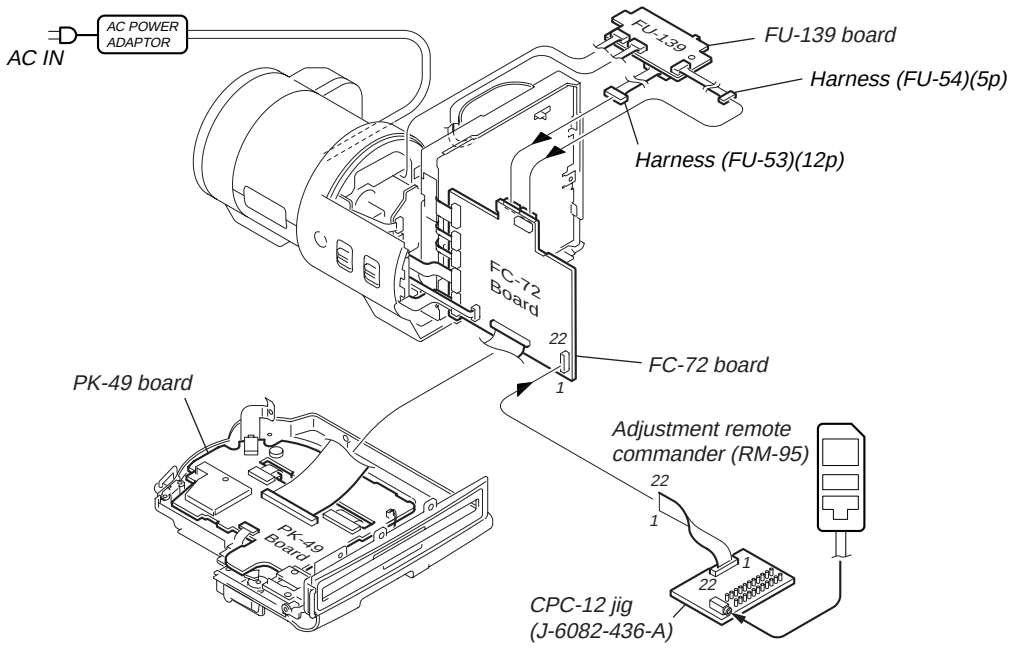
2. Prohibited Items

Do not apply any physical stress to the center of the top plate.



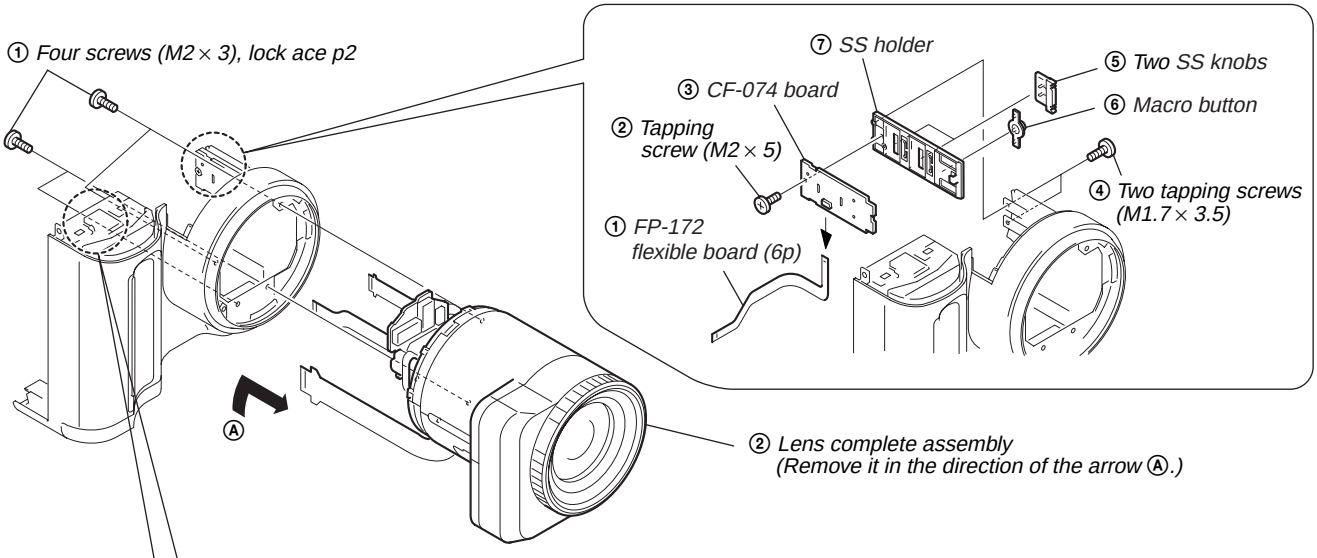
Do not hold an FDD by sandwiching the upper and lower surfaces.

[FC-72, FU-139 BOARDS CHECK SERVICE POSITION]

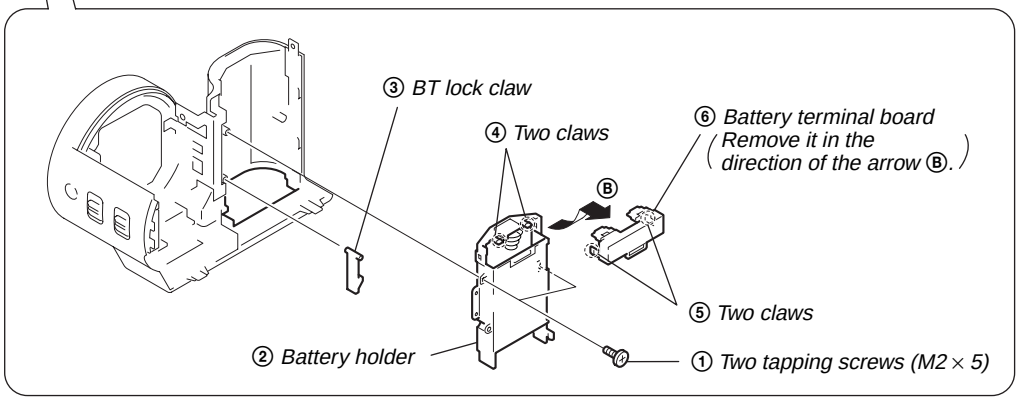


2-5. LENS COMPLETE ASSEMBLY

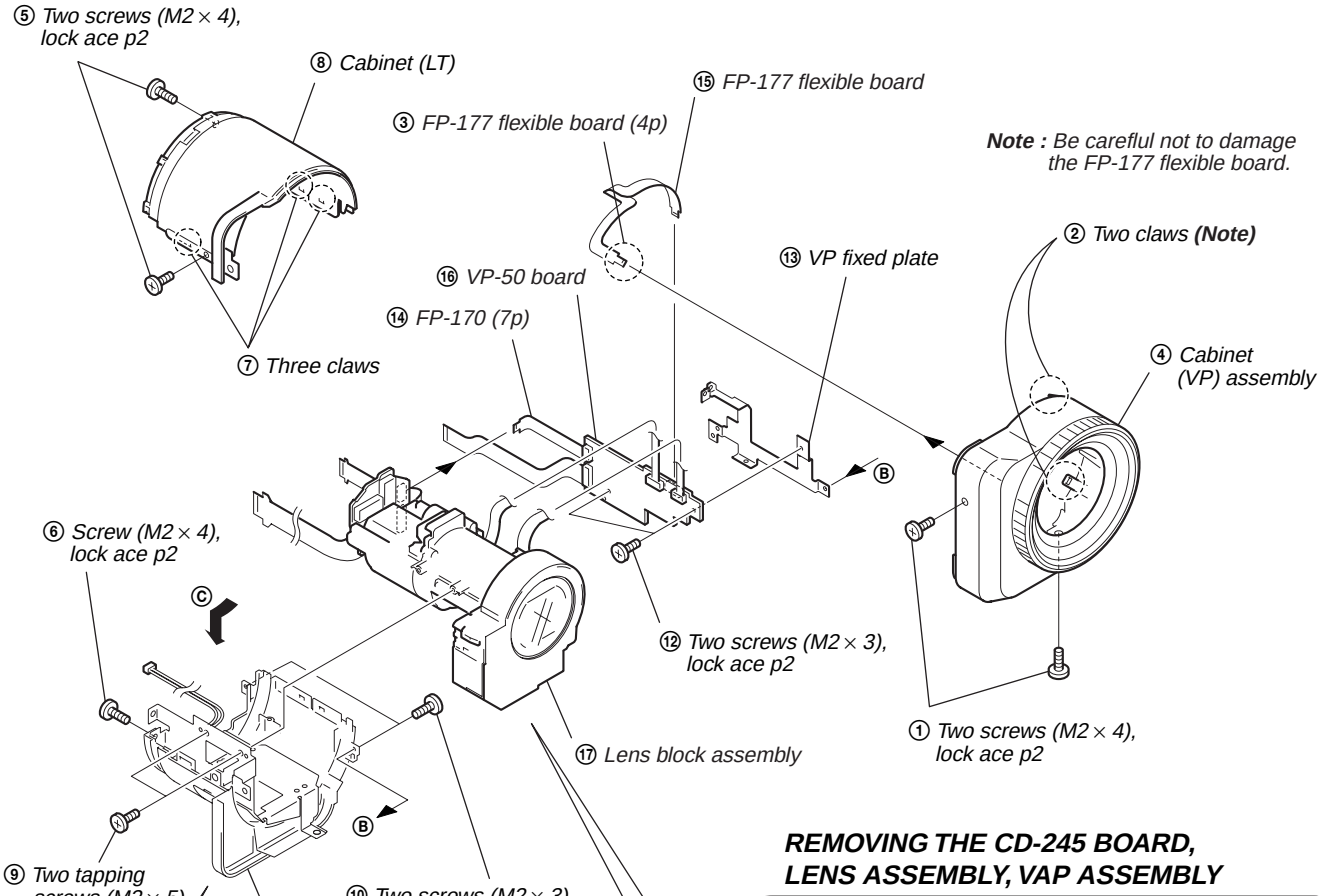
REMOVING THE CF-074 BOARD


① Four screws (M2 × 3), lock ace p2
⑦ SS holder
⑤ Two SS knobs
③ CF-074 board
⑥ Macro button
② Tapping screw (M2 × 5)
④ Two tapping screws (M1.7 × 3.5)
① FP-172 flexible board (6p)
Ⓐ
② Lens complete assembly (Remove it in the direction of the arrow Ⓐ.)

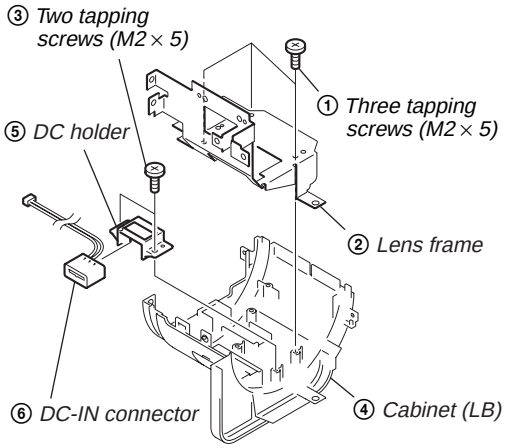
REMOVING THE BATTERY TERMINAL BOARD


③ BT lock claw
④ Two claws
⑥ Battery terminal board
(Remove it in the direction of the arrow Ⓑ.)
Ⓑ
⑤ Two claws
② Battery holder
① Two tapping screws (M2 × 5)

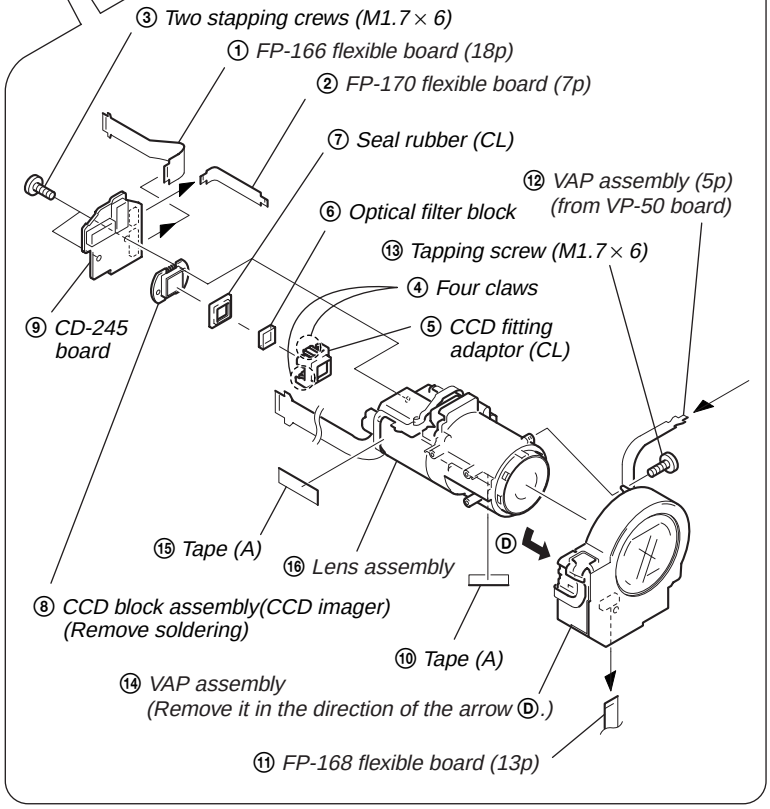
2-6. VP-50 BOARD, LENS BLOCK ASSEMBLY


⑤ Two screws (M2 × 4), lock ace p2
⑧ Cabinet (LT)
⑦ Three claws
⑮ FP-177 flexible board
③ FP-177 flexible board (4p)
Note : Be careflul not to damage the FP-177 flexible board.
② Two claws (Note)
⑬ VP fixed plate
⑯ VP-50 board
⑭ FP-170 (7p)
④ Cabinet (VP) assembly
Ⓑ
⑥ Screw (M2 × 4), lock ace p2
Ⓒ
⑫ Two screws (M2 × 3), lock ace p2
⑰ Lens block assembly
① Two screws (M2 × 4), lock ace p2
⑨ Two tapping screws (M2 × 5)
⑩ Two screws (M2 × 3), lock ace p2
⑪ Cabinet (LB) assembly (Remove it in the direction of the arrow Ⓒ.)

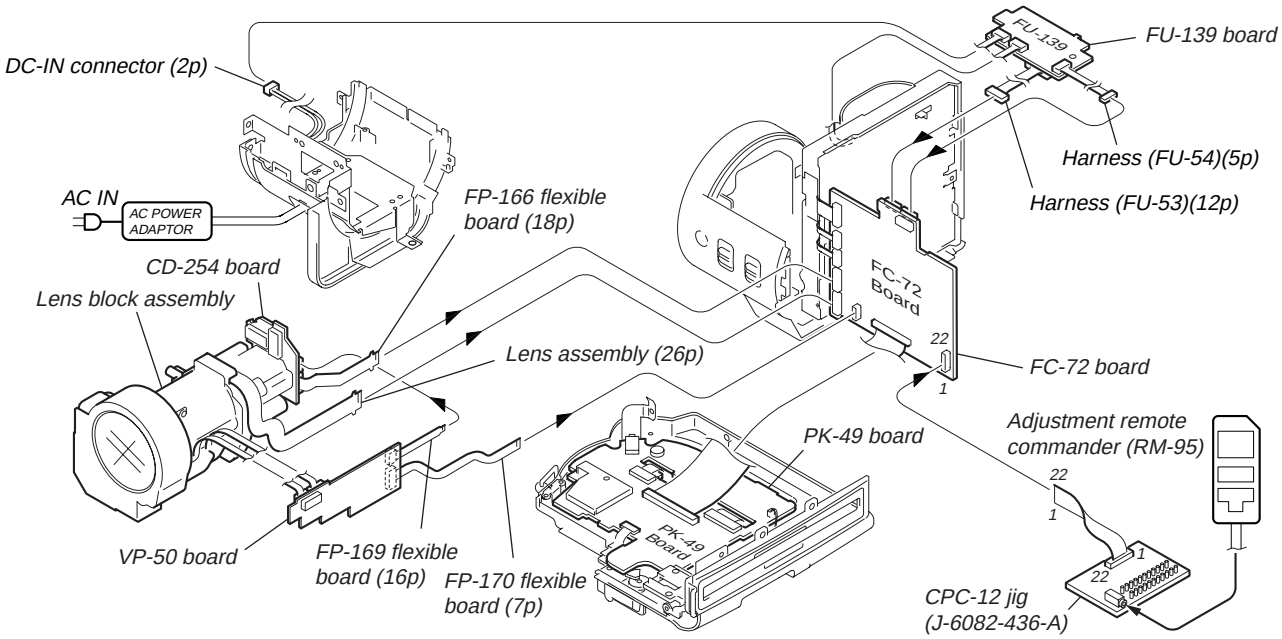
REMOVING THE DC-IN CONNECTOR



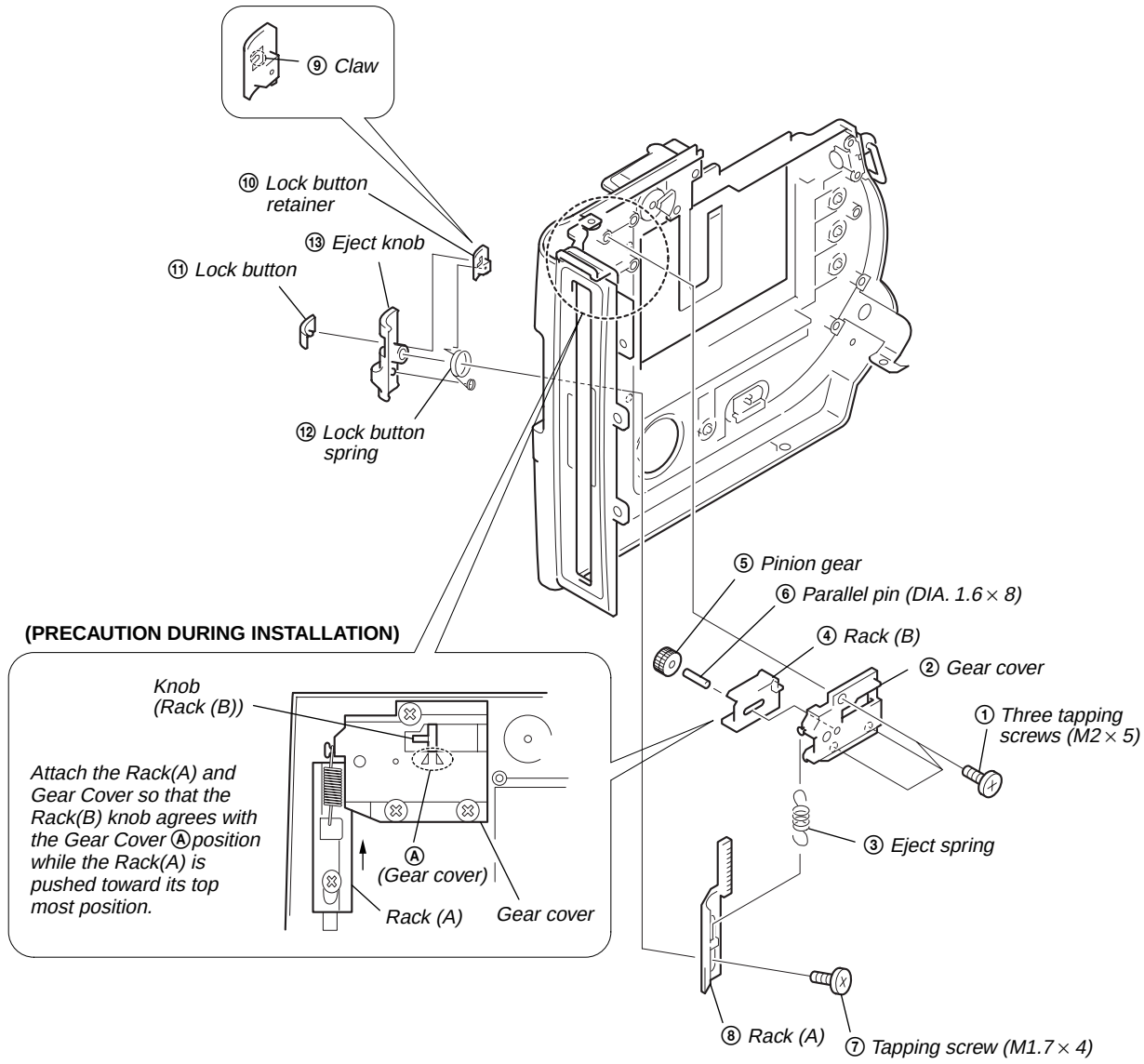
REMOVING THE CD-245 BOARD, LENS ASSEMBLY, VAP ASSEMBLY


③ Two stapping crews (M1.7 × 6)
① FP-166 flexible board (18p)
② FP-170 flexible board (7p)
⑦ Seal rubber (CL)
⑫ VAP assembly (5p) (from VP-50 board)
⑥ Optical filter block
⑬ Tapping screw (M1.7 × 6)
④ Four claws
⑨ CD-245 board
⑤ CCD fitting adaptor (CL)
⑮ Tape (A)
⑯ Lens assembly
Ⓓ
⑧ CCD block assembly(CCD imager) (Remove soldering)
⑩ Tape (A)
⑭ VAP assembly (Remove it in the direction of the arrow Ⓓ.)
⑪ FP-168 flexible board (13p)

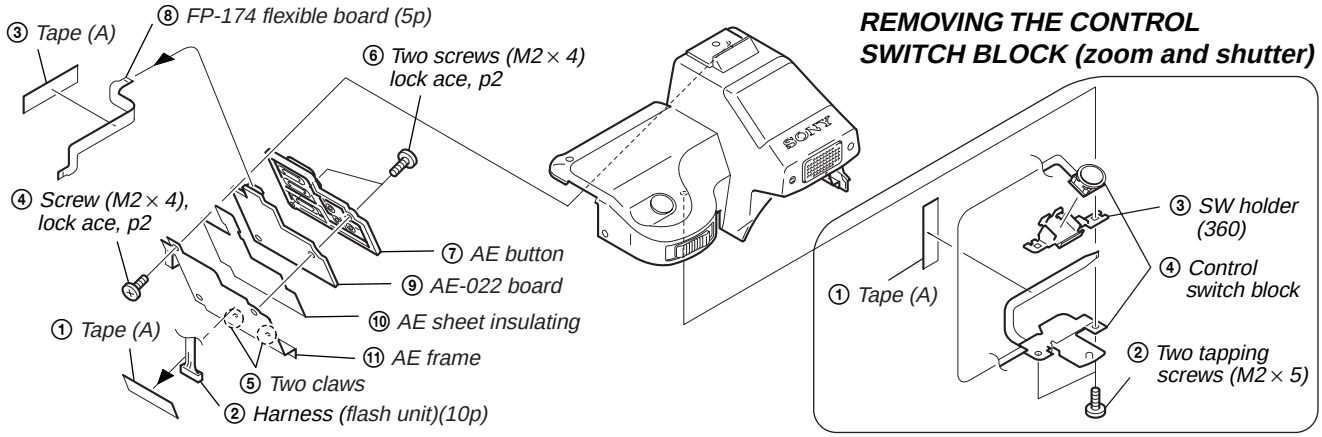
[LENS BLOCK (CD-245 BOARD), VP-50 BOARD CHECK SERVICE POSITION]



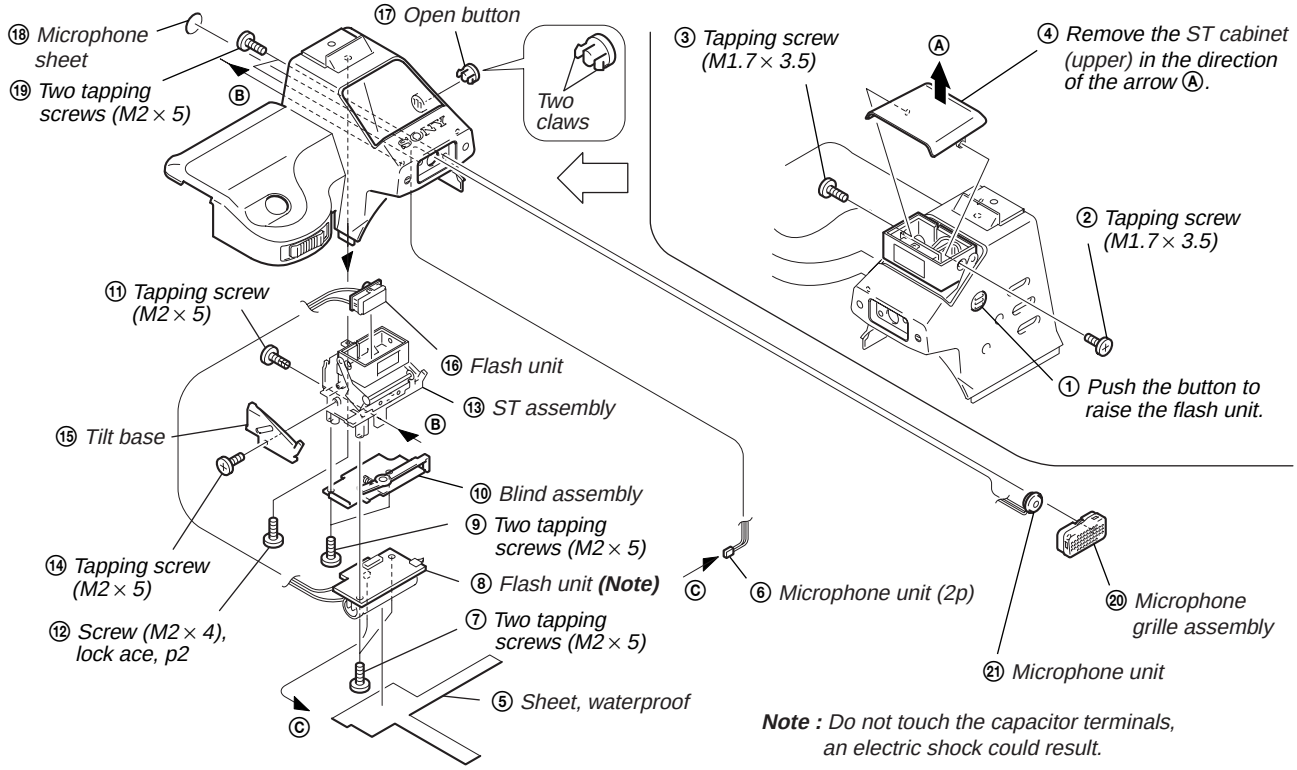
2-7. EJECT BUTTON SECTION


⑨ Claw
⑩ Lock button retainer
⑬ Eject knob
⑪ Lock button
⑫ Lock button spring
⑤ Pinion gear
⑥ Parallel pin (DIA. 1.6 × 8)
④ Rack (B)
② Gear cover
① Three tapping screws (M2 × 5)
③ Eject spring
⑧ Rack (A)
⑦ Tapping screw (M1.7 × 4)
(PRECAUTION DURING INSTALLATION)
Knob (Rack (B))
Attach the Rack(A) and Gear Cover so that the Rack(B) knob agrees with the Gear Cover Ⓐ position while the Rack(A) is pushed toward its top most position.
Ⓐ (Gear cover)
Rack (A)
Gear cover

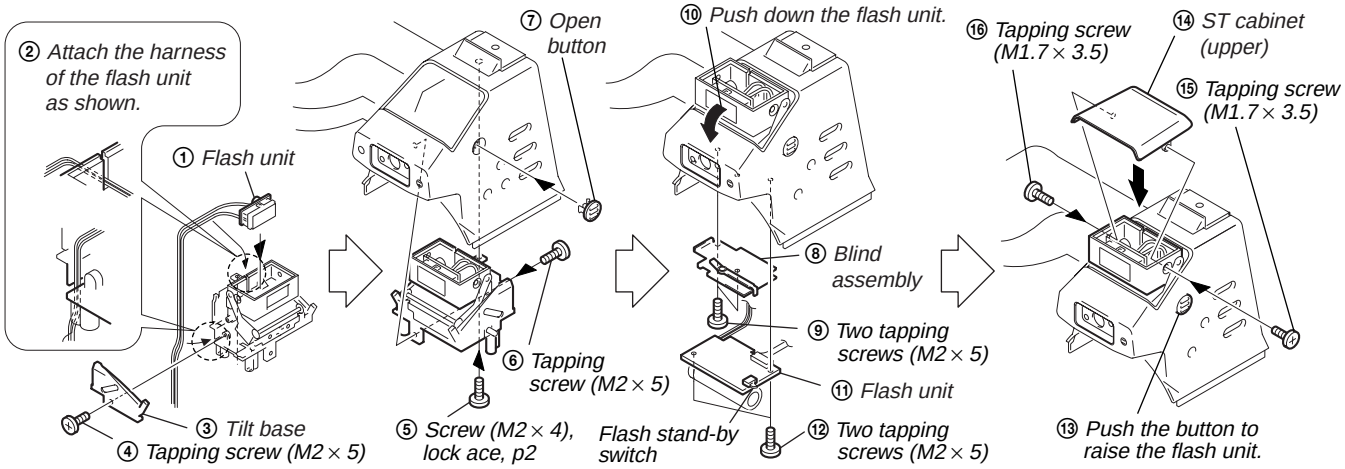
2-8. AE-022 BOARD


③ Tape (A)
⑧ FP-174 flexible board (5p)
⑥ Two screws (M2 × 4) lock ace, p2
④ Screw (M2 × 4), lock ace, p2
⑦ AE button
⑨ AE-022 board
⑩ AE sheet insulating
① Tape (A)
⑪ AE frame
⑤ Two claws
② Harness (flash unit)(10p)
REMOVING THE CONTROL SWITCH BLOCK (zoom and shutter)
③ SW holder (360)
④ Control switch block
① Tape (A)
② Two tapping screws (M2 × 5)

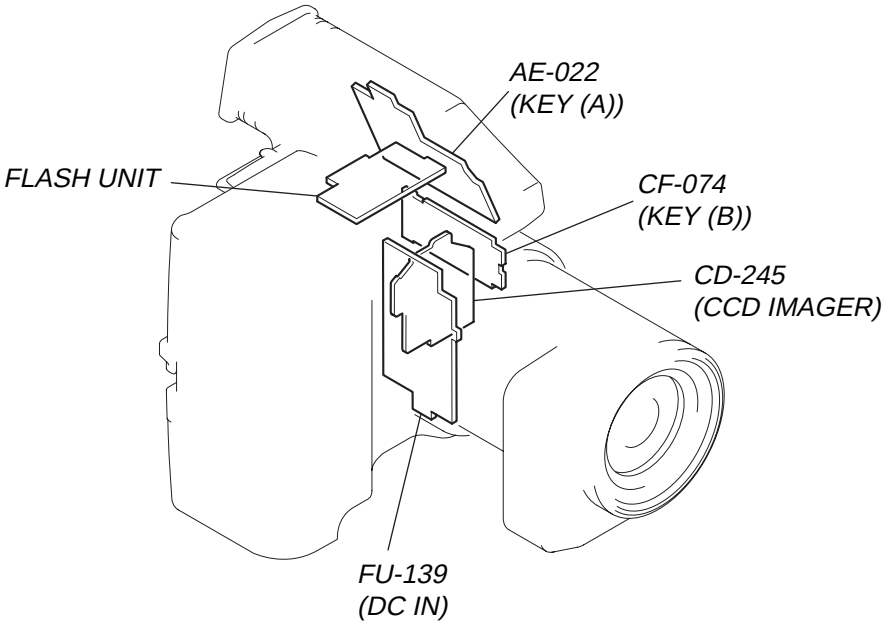
2-9. FLASH UNIT, MICROPHONE UNIT

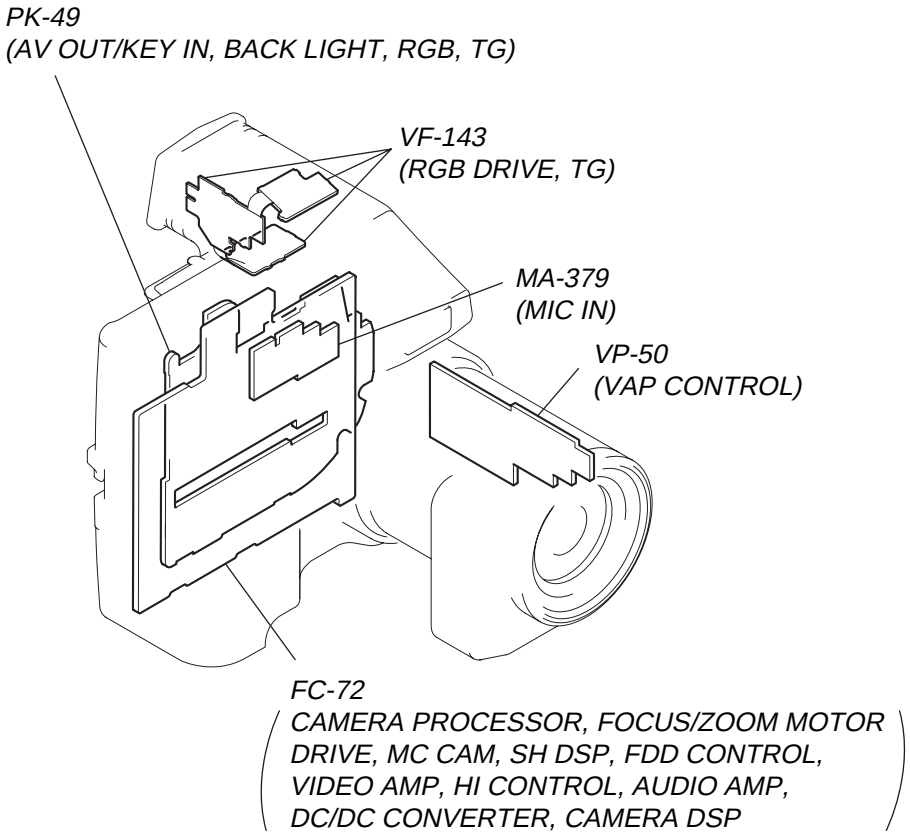

⑱ Microphone sheet
⑲ Two tapping screws (M2 × 5)
⑰ Open button
Two claws
③ Tapping screw (M1.7 × 3.5)
④ Remove the ST cabinet (upper) in the direction of the arrow Ⓐ.
② Tapping screw (M1.7 × 3.5)
⑪ Tapping screw (M2 × 5)
⑯ Flash unit
⑬ ST assembly
⑮ Tilt base
⑩ Blind assembly
⑨ Two tapping screws (M2 × 5)
⑭ Tapping screw (M2 × 5)
⑧ Flash unit (Note)
⑫ Screw (M2 × 4), lock ace, p2
⑦ Two tapping screws (M2 × 5)
⑤ Sheet, waterproof
⑥ Microphone unit (2p)
① Push the button to raise the flash unit.
⑳ Microphone grille assembly
㉑ Microphone unit
Note : Do not touch the capacitor terminals, an electric shock could result.

INSTALLING THE FLASH UNIT

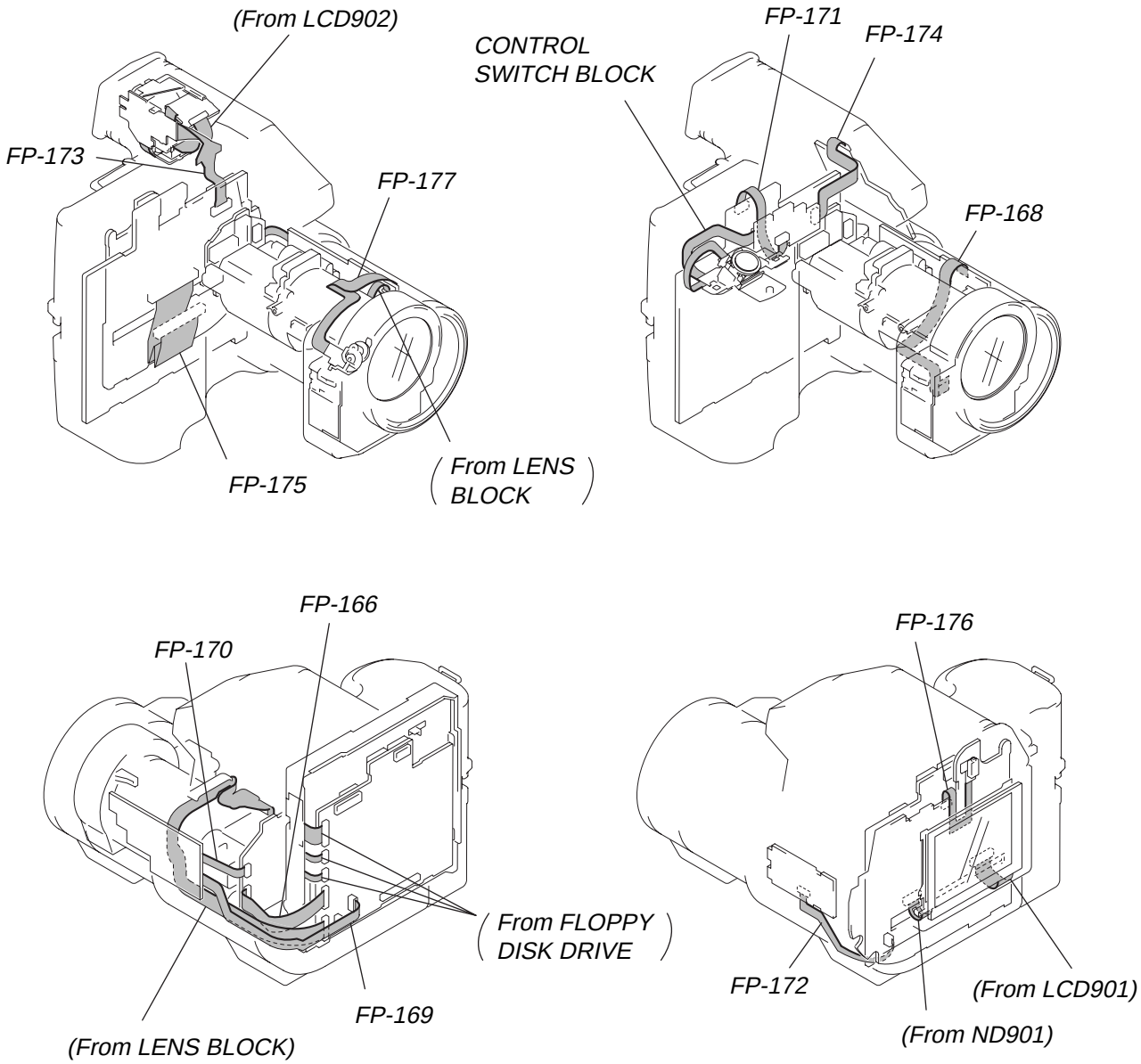

② Attach the harness of the flash unit as shown.
① Flash unit
⑦ Open button
⑩ Push down the flash unit.
⑯ Tapping screw (M1.7 × 3.5)
⑭ ST cabinet (upper)
⑮ Tapping screw (M1.7 × 3.5)
⑧ Blind assembly
⑨ Two tapping screws (M2 × 5)
⑥ Tapping screw (M2 × 5)
⑪ Flash unit
③ Tilt base
④ Tapping screw (M2 × 5)
⑤ Screw (M2 × 4), lock ace, p2
Flash stand-by switch
⑫ Two tapping screws (M2 × 5)
⑬ Push the button to raise the flash unit.

2-10. CIRCUIT BOARDS LOCATION





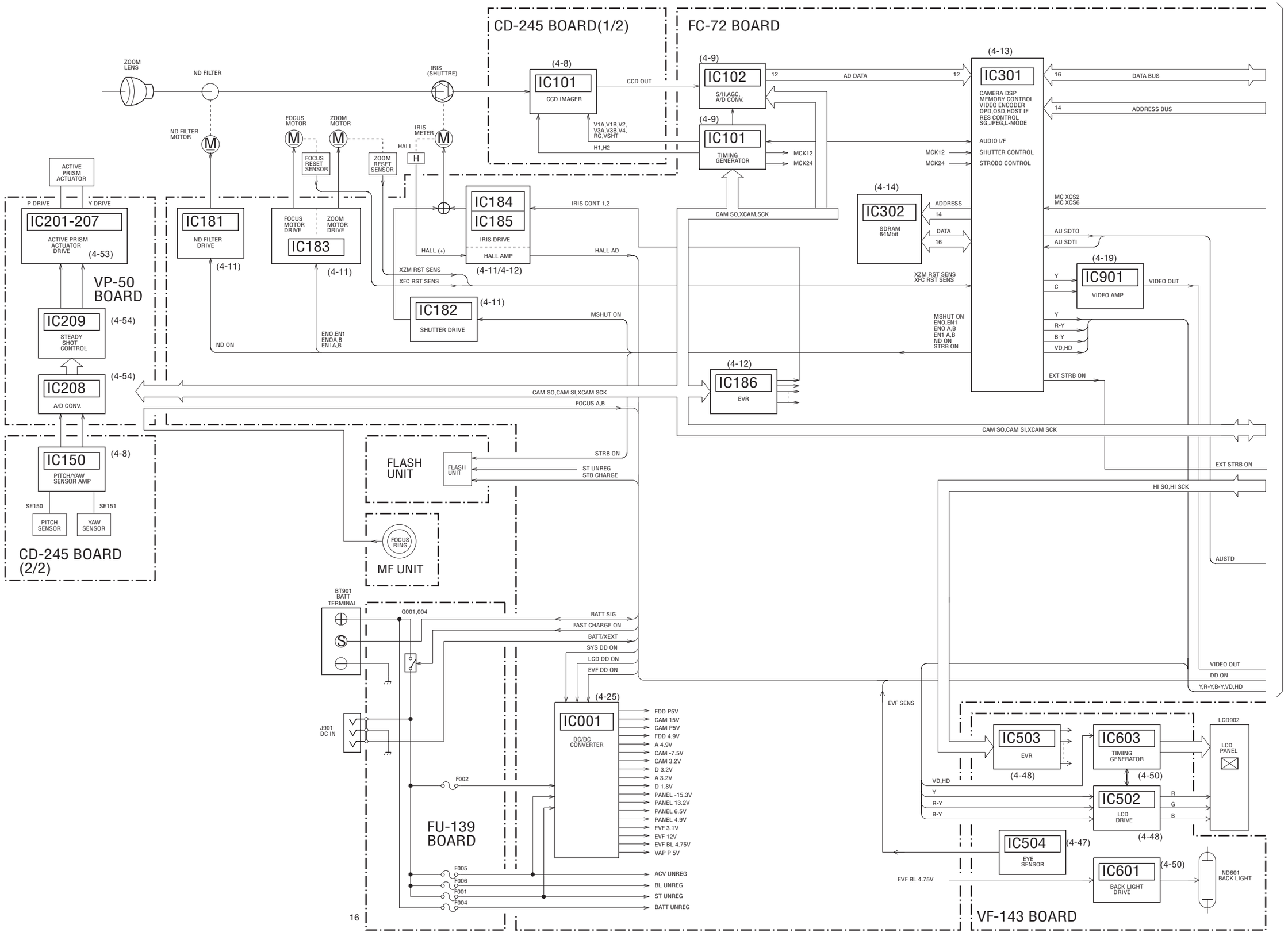
2-11. FLEXIBLE BOARDS LOCATION



SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/2)

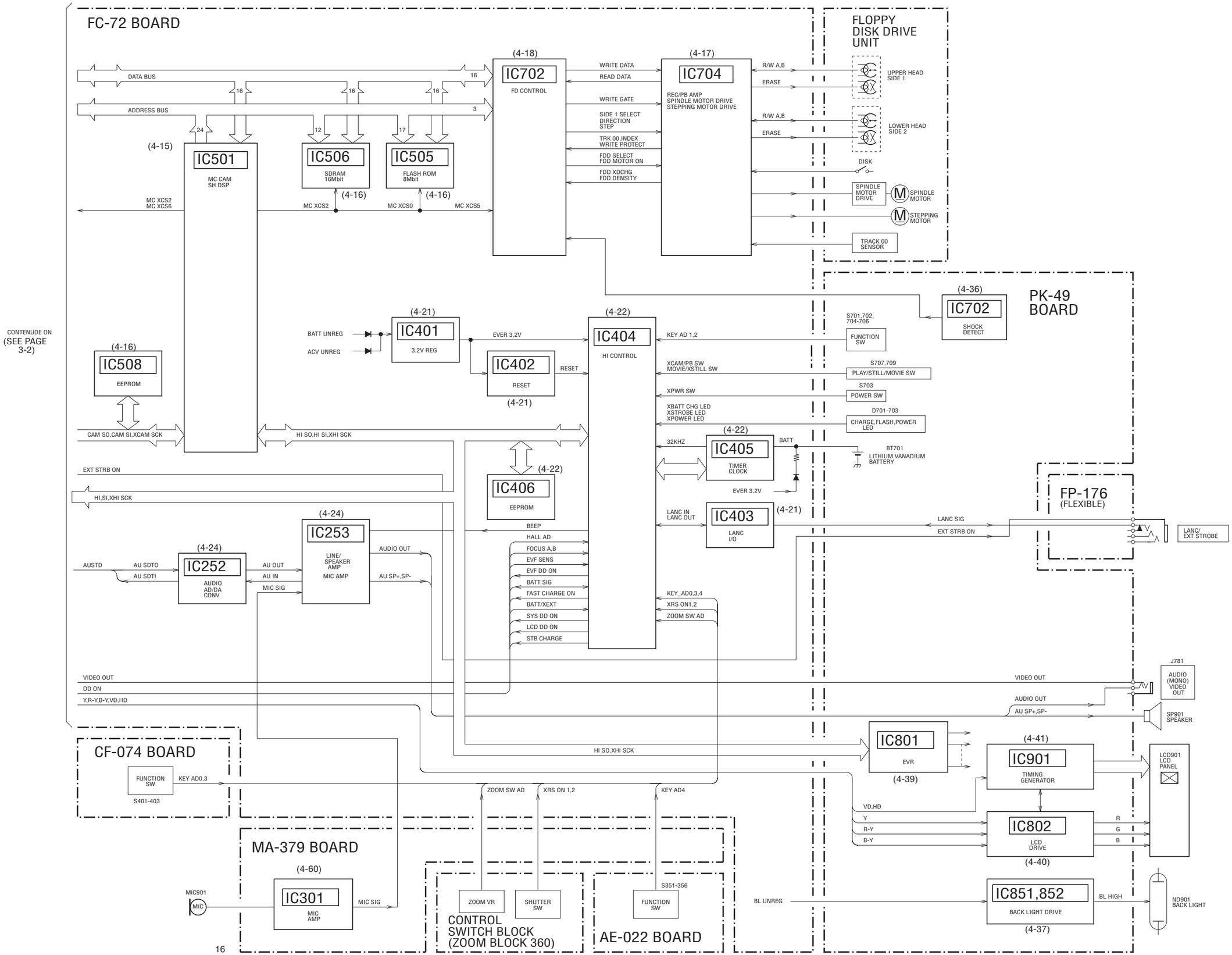
( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



CONTENUDE ON (SEE PAGE 3-3)

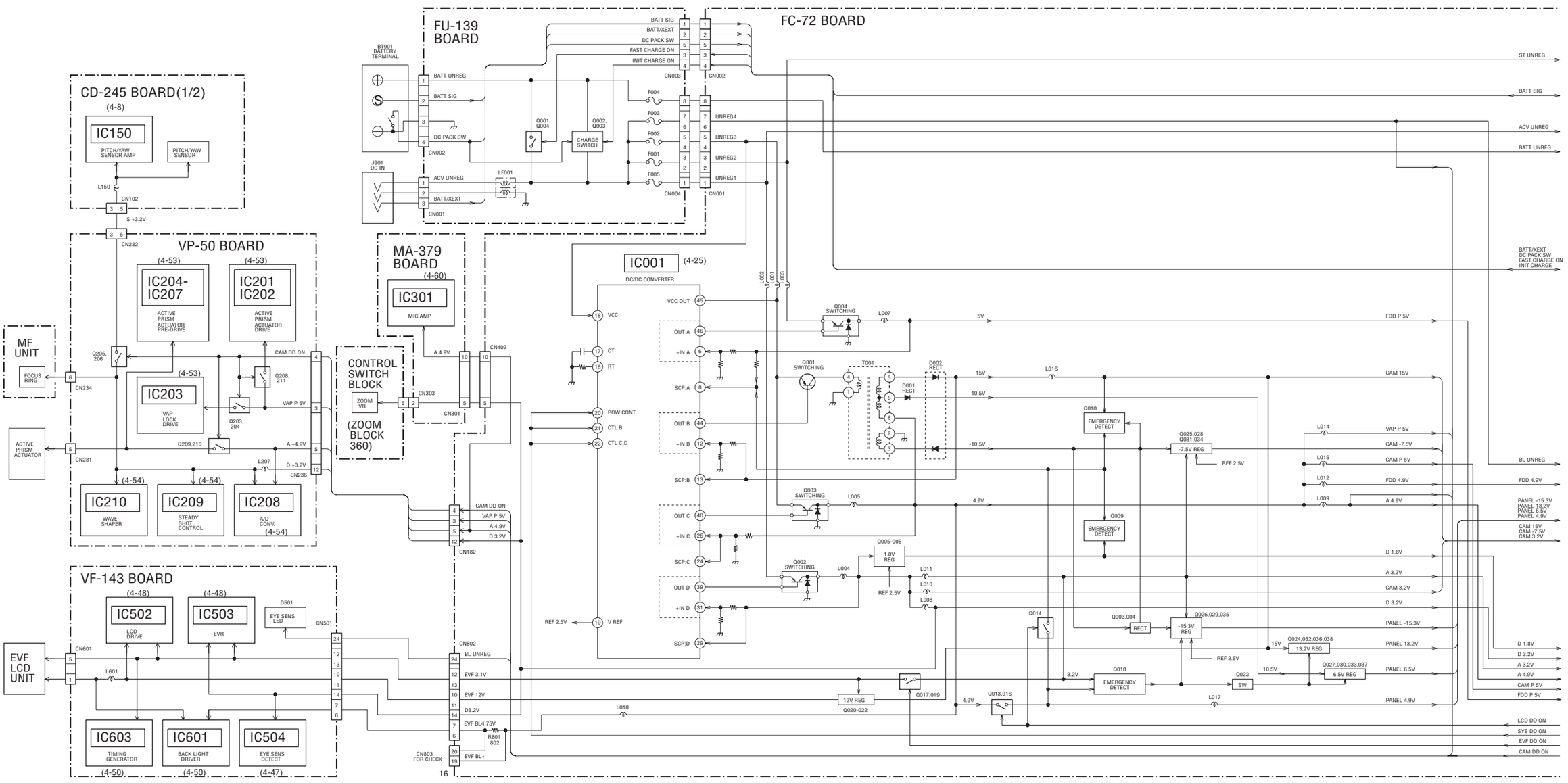
3-2. OVERALL BLOCK DIAGRAM (2/2)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



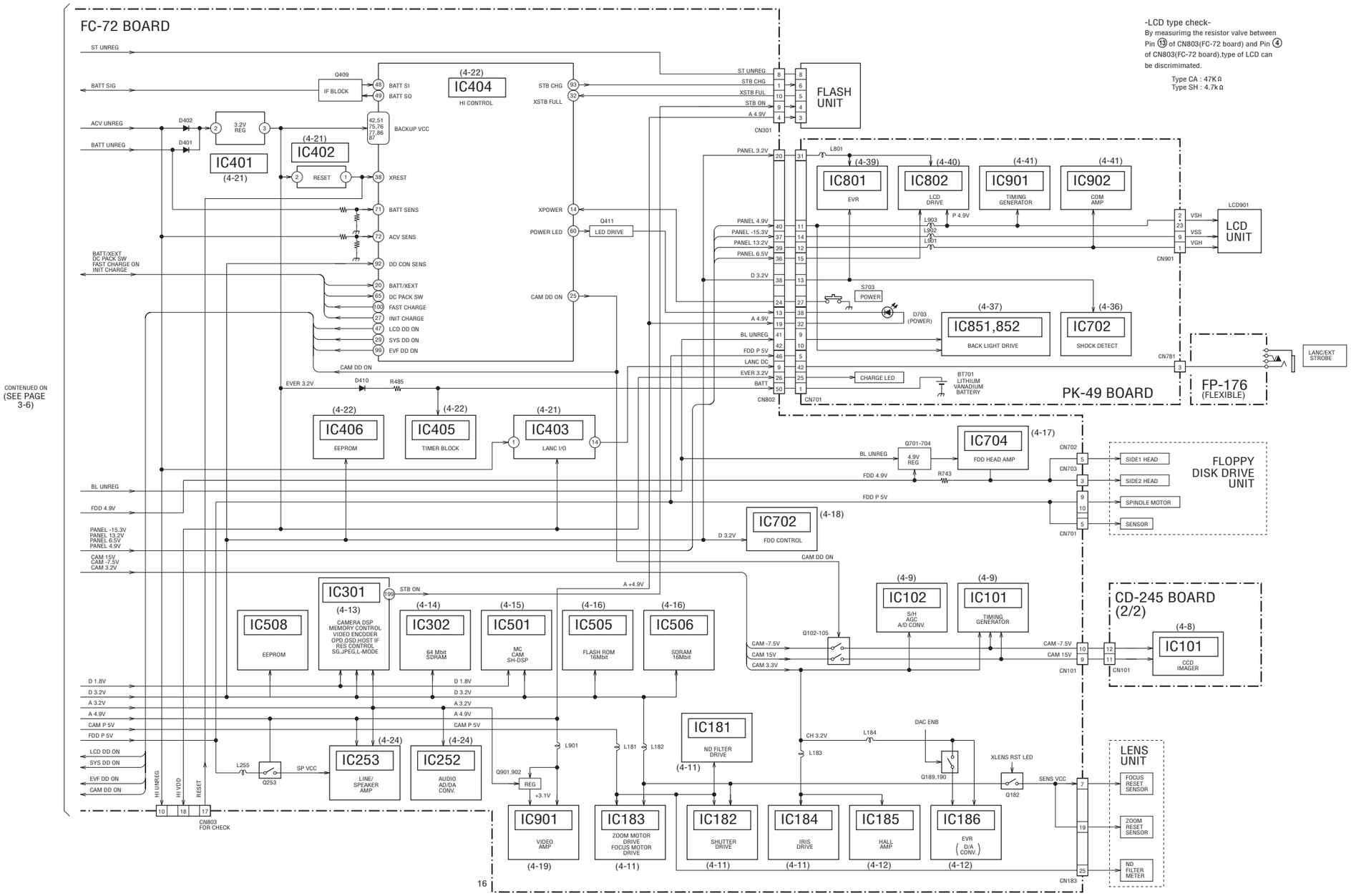
3-3. POWER BLOCK DIAGRAM (1/2)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



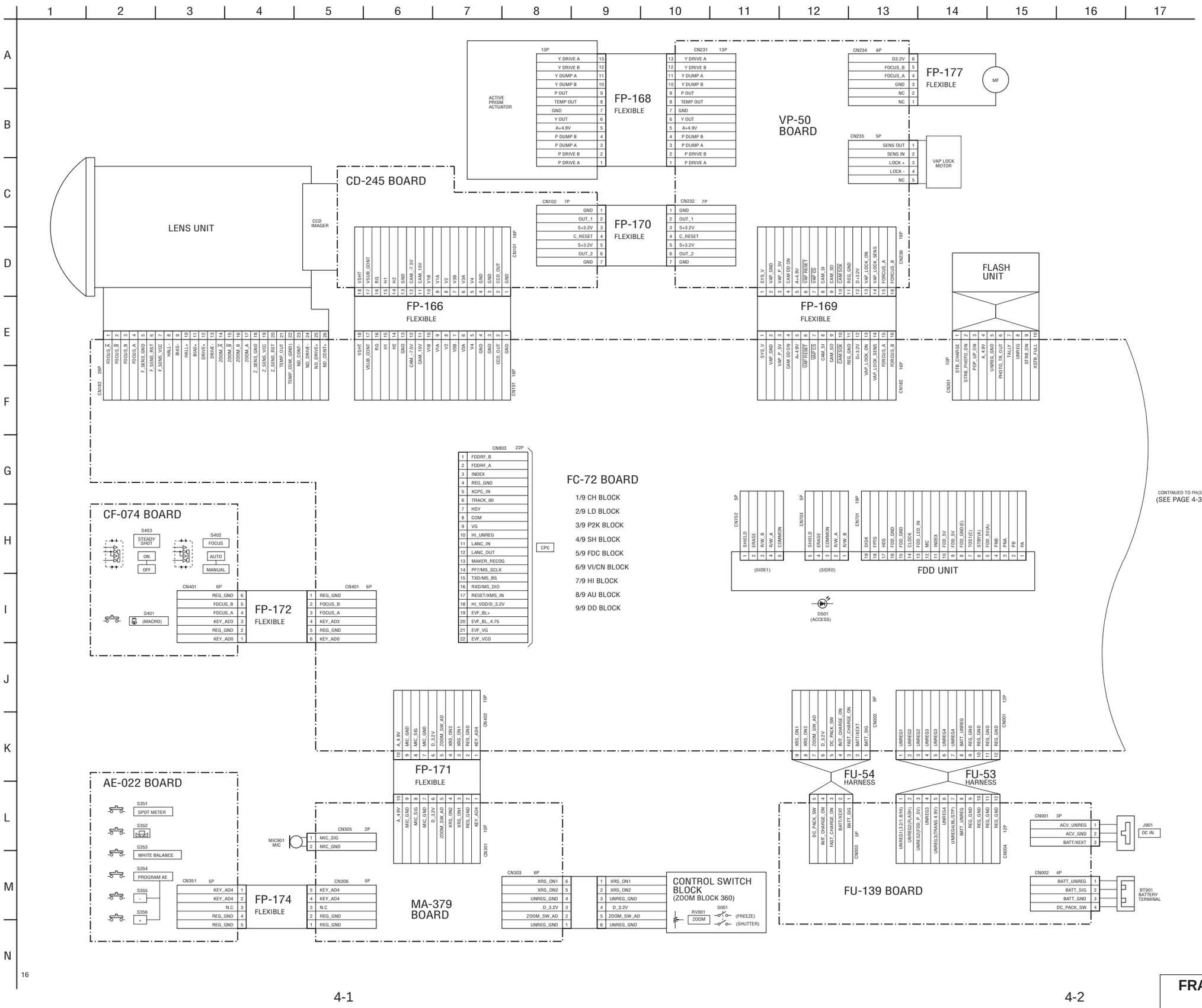
3-4. POWER BLOCK DIAGRAM (2/2)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.

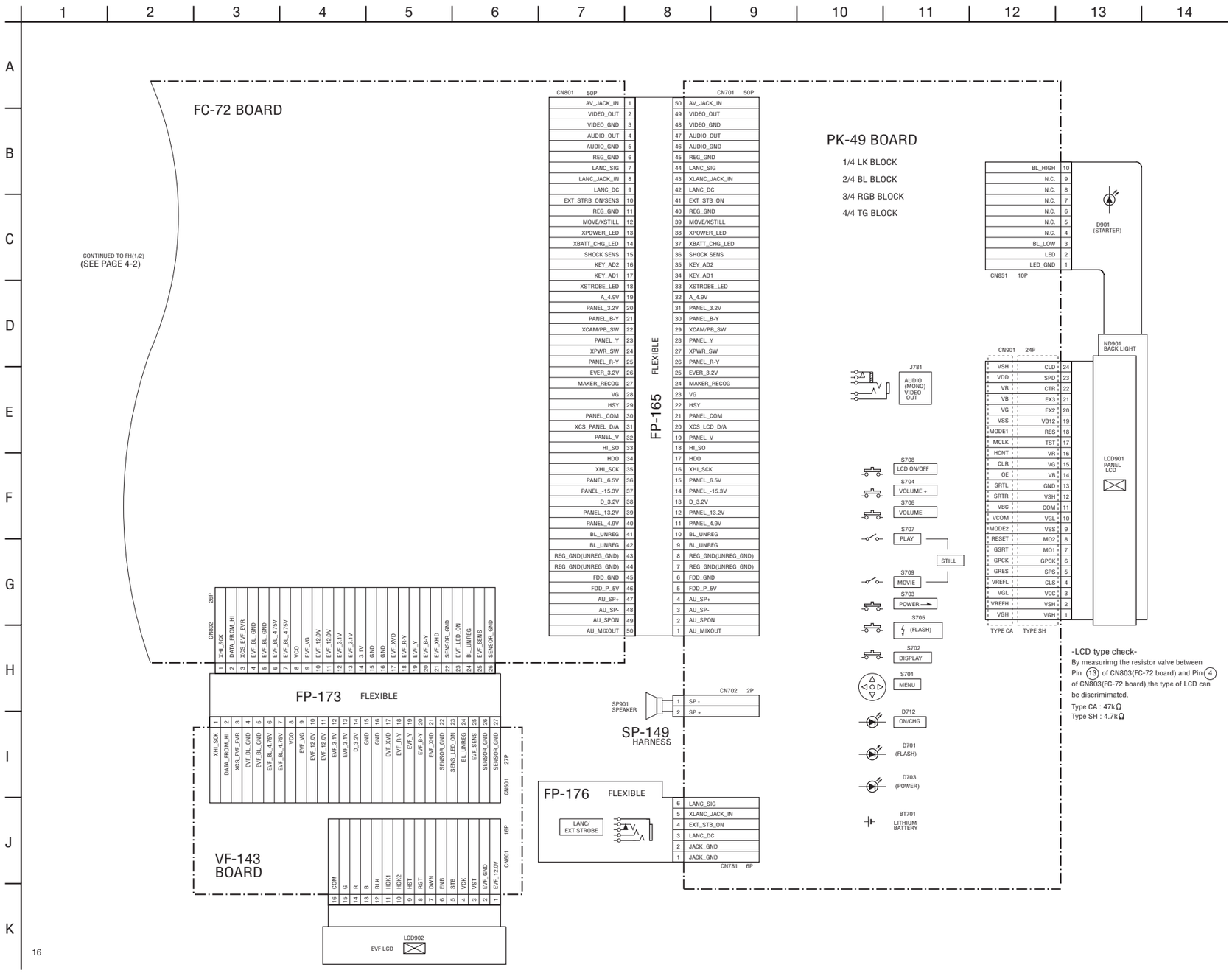


SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/2)



FRAME SCHEMATIC DIAGRAM (2/2)

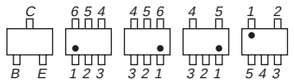


4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

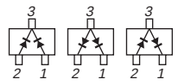
THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)
- ▒▒▒: Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.

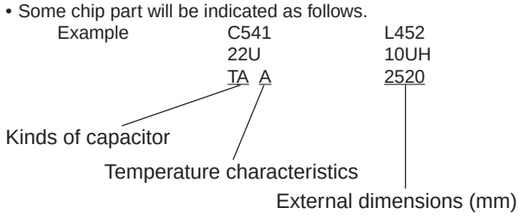
Transistor



Diode



(For schematic diagrams)
- All capacitors are in μF unless otherwise noted. pF : μμF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted.
  kΩ=1000Ω, MΩ=1000kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.



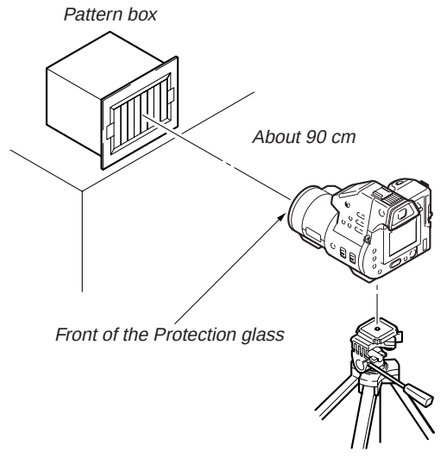
- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination.
  Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line *
- : B– Line *
- : IN/OUT direction of (+,–) B LINE. *
- : adjustment for repair. *
- Circled numbers refer to waveforms. *

* Indicated by the color red.

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(Measuring conditions voltage and waveform)
- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. *
  (VOM of DC 10 MΩ input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.) *

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

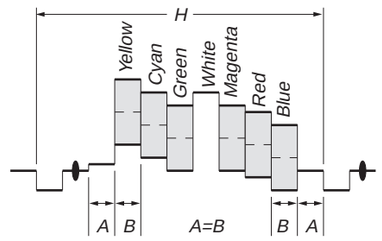


Fig. a (Video output terminal output waveform)

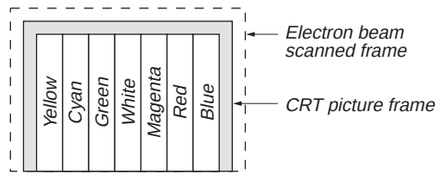
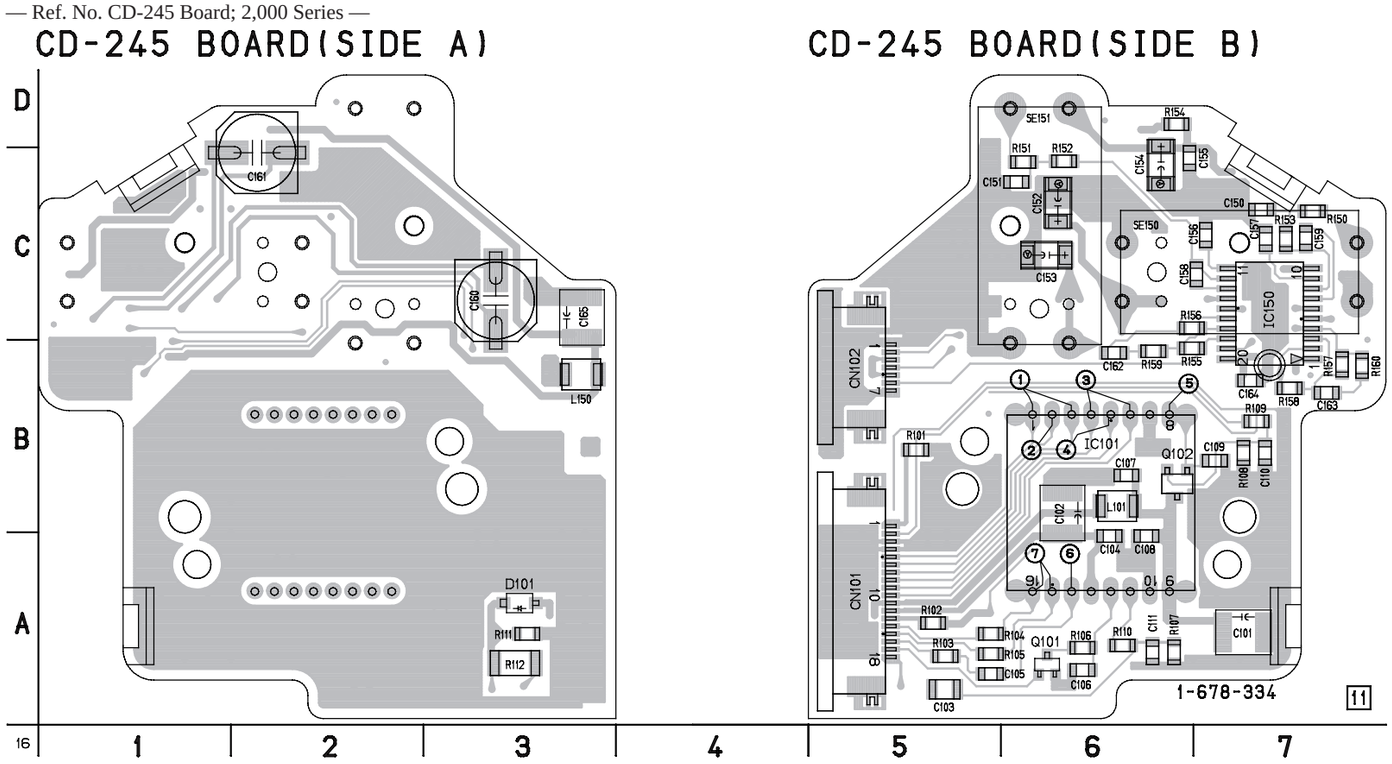


Fig.b (Picture on monitor TV)

When indicating parts by reference number, pleas include the board name.

CD-245 (CCD IMAGER) PRINTED WIRING BOARD

— Ref. No. CD-245 Board; 2,000 Series —

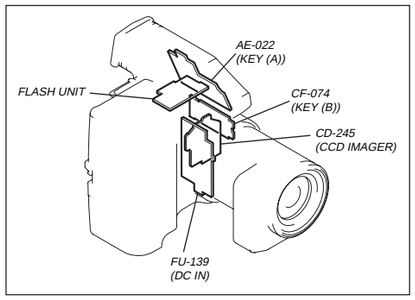


For printed wiring boards

- Refer to page 4-69 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.
- Chip parts

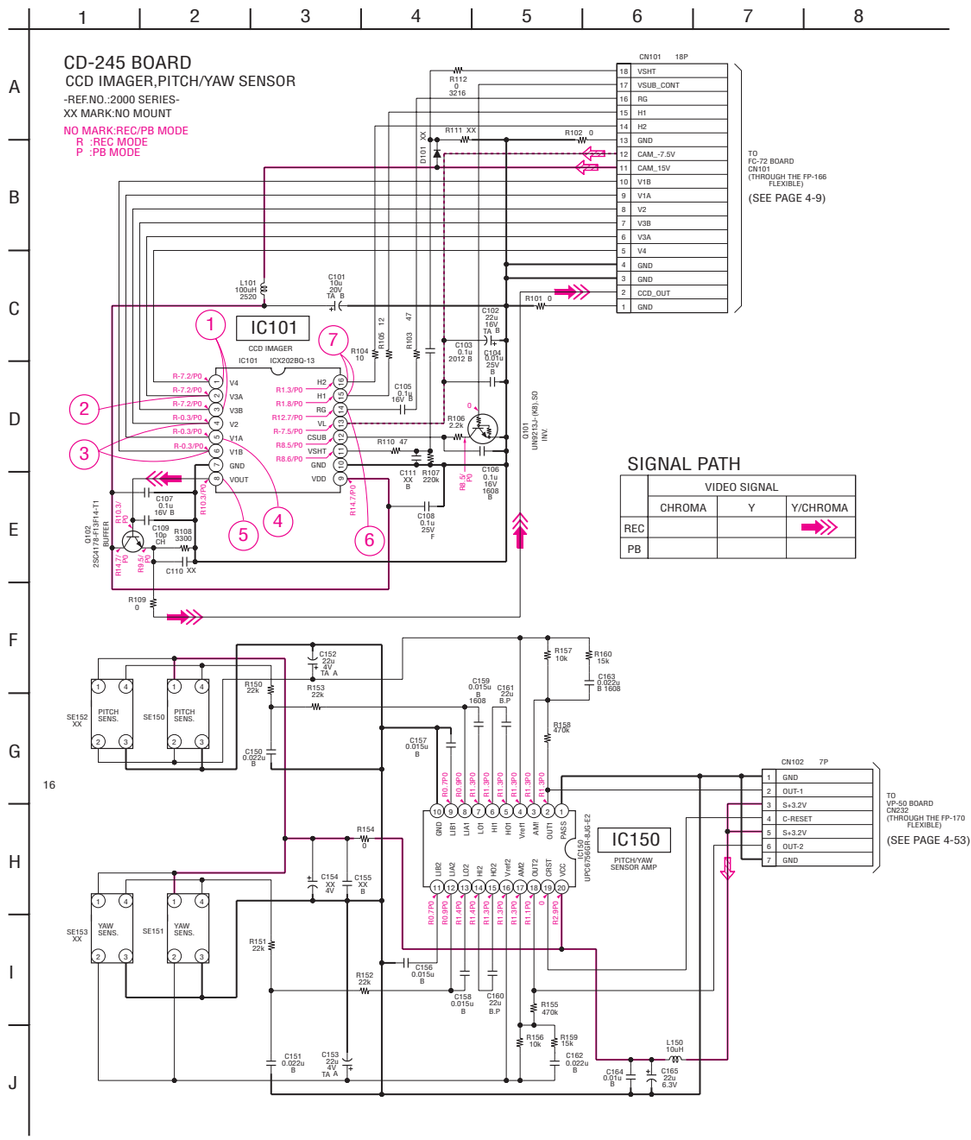
Transistor

There are few cases that the part printed on this diagram isn't mounted in this model.



For schematic diagram

- Refer to page 4-65 for waveforms.



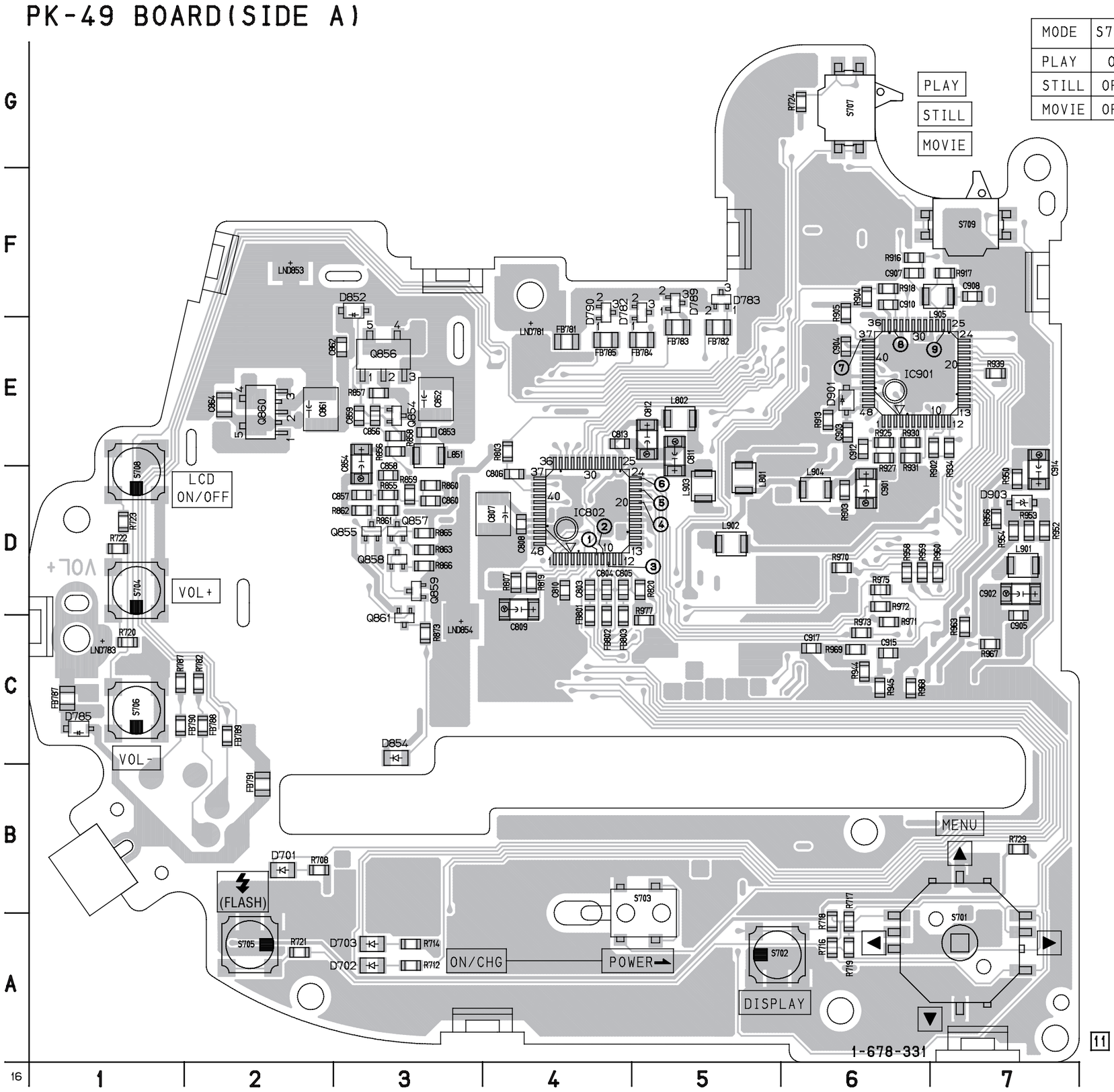
Precautions Upon Replacing CCD Imager

- The CD-245 board mounted as a repair part is not equipped with a CCD imager.
  When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

Schematic diagram and printed wiring board of the FC-72 board are not shown.
Pages from 4-9 to 4-30 are not shown.

PK-49 (AV OUT/KEY IN, BACK LIGHT, RGB, TG) PRINTED WIRING BOARD

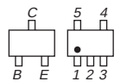
— Ref. No. PK-49 Board; 5,000 Series —



For printed wiring boards

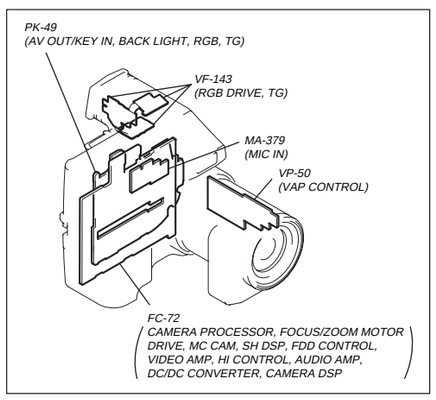
- Refer to page 4-70 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.
- Chip parts

Transistor



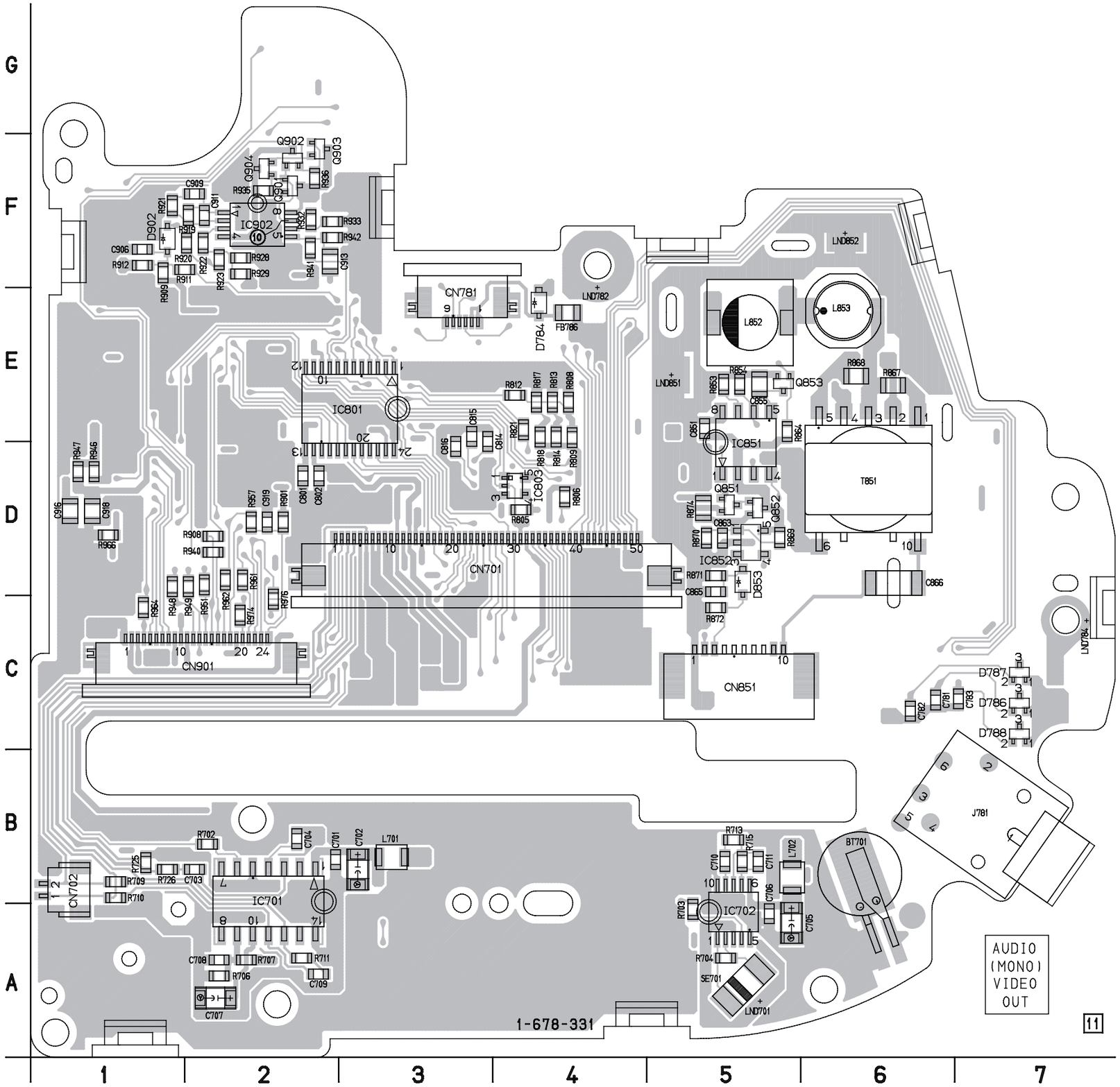
Diode

There are few cases that the part printed on this diagram isn't mounted in this model.


PK-49
(AV OUT/KEY IN, BACK LIGHT, RGB, TG)
VF-143
(RGB DRIVE, TG)
MA-379
(MIC IN)
VP-50
(VAP CONTROL)
FC-72
CAMERA PROCESSOR, FOCUS/ZOOM MOTOR DRIVE, MC CAM, SH DSP, FDD CONTROL, VIDEO AMP, HI CONTROL, AUDIO AMP, DC/DC CONVERTER, CAMERA DSP

AV OUT/KEY IN, BACK LIGHT, RGB, TG
PK-49

PK-49 BOARD(SIDE B)



For schematic diagram

• Refer to page 4-31 for printed wiring board.

PK-49 BOARD(1/4)
AV OUT/KEY IN(LK BLOCK)
-REF.NO.:5000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB			⇒	⇨

CN701 50P

AV_JACK_IN	50
VIDEO_OUT	49
VIDEO_GND	48
AUDIO_OUT	47
AUDIO_GND	46
REG_GND	45
LANC_SIG	44
XLANC_JACK_IN	43
LANC_DC	42
EXT_STB_ON	41
REG_GND	40
MOVE/XSTILL	39
XPOWER_LED	38
XBATT_CHG_LED	37
SHOCK SENS	36
KEY_AD2	35
KEY_AD1	34
XSTROBE_LED	33
A_4.9V	32
PANEL_3.2V	31
PANEL_B-Y	30
XCAM/PB_SW	29
PANEL_Y	28
XPWR_SW	27
PANEL_R-Y	26
EVER_3.2V	25
MAKER_RECOG	24
VG	23
HSY	22
PANEL_COM	21
XCS_LCD_D/A	20
PANEL_V	19
HI_SO	18
HDO	17
XHI_SCK	16
PANEL_6.5V	15
PANEL_-15.3V	14
D_3.2V	13
PANEL_13.2V	12
PANEL_4.9V	11
BL_UNREG	10
BL_UNREG	9
REG_GND(UNREG_GND)	8
REG_GND(UNREG_GND)	7
FDD_GND	6
FDD_P_5V	5
AU_SP+	4
AU_SP-	3
AU_SPON	2
AU_MIXOUT	1

TO FC-72 BOARD CN801 (THROUGH THE FP-165 FREXIBLE)
(SEE PAGE 4-20)

CN702 2P
SP901 SPEAKER
SP-149 HARNESS

R782 1k
R787 1k
FB788 0uH
FB789 0uH
FB790 0uH
FB791 0uH
C781 XX
C782 XX
C783 XX
J781 AUDIO (MONO) VIDEO OUT
D785 MA111-(K8).SO
D786 MA4Z082WA-(TX).SO
D787 MA4Z082WA-(TX).SO
D788 MA4Z082WA-(TX).SO
FB787 0uH
LND783 FLAME_GND
LND784 FLAME_GND

FP-176 FLEXIBLE
CN781 6P
FB782 0uH
FB783 0uH
FB784 0uH
FB785 0uH
FB786 0uH
6 LANC_SIG
5 XLANC_JACK_IN
4 EXT_STB_ON
3 LANC_DC
2 JACK_GND
1 JACK_GND
LANC/ EXT STROBE
Note:JACK is mounted in FP-176 FLEXIBLE.

D782 D783 D789 D790
MA4Z082WA-(TX).SO
D784 MA111-(K8).SO
FB781
LND781 FLAME_GND
LND782 FLAME_GND

CHARGE LED(AMBER)
D702 TLYU1002(TPX1,SONY)
R712 270
D701 TLYU1002(TPX1,SONY)
R708 680
FLASH LED(AMBER)
D703 TLGU1002(TPX1,SONY)
R714 680
POWER LED(GREEN)

POWER S703
PLAY S707
STILL
MOVIE S709
SB-C4241
R724 10k

PANEL_B-Y 8 TO(3/4)
PANEL_Y
PANEL_R-Y
MAKER_RECOG 11 TO(4/4)
HSY
PANEL_COM 13 TO(4/4)
HDO 16 TO(4/4)
PANEL_V
HI_SO 15 TO(3/4)
XCS_PANEL_D/A
XHI_SCK
PANEL_3.2V 17 TO(3/4)
PANEL_6.5V
REG_GND
PANEL_3.2V 19 TO(4/4)
PANEL_13.2V
PANEL_-15.3V
PANEL_4.9V
REG_GND
D_3.2V 12 TO(3/4,4/4)
PANEL_4.9V 2 TO(2/4)
BL_UNREG
BL_GND

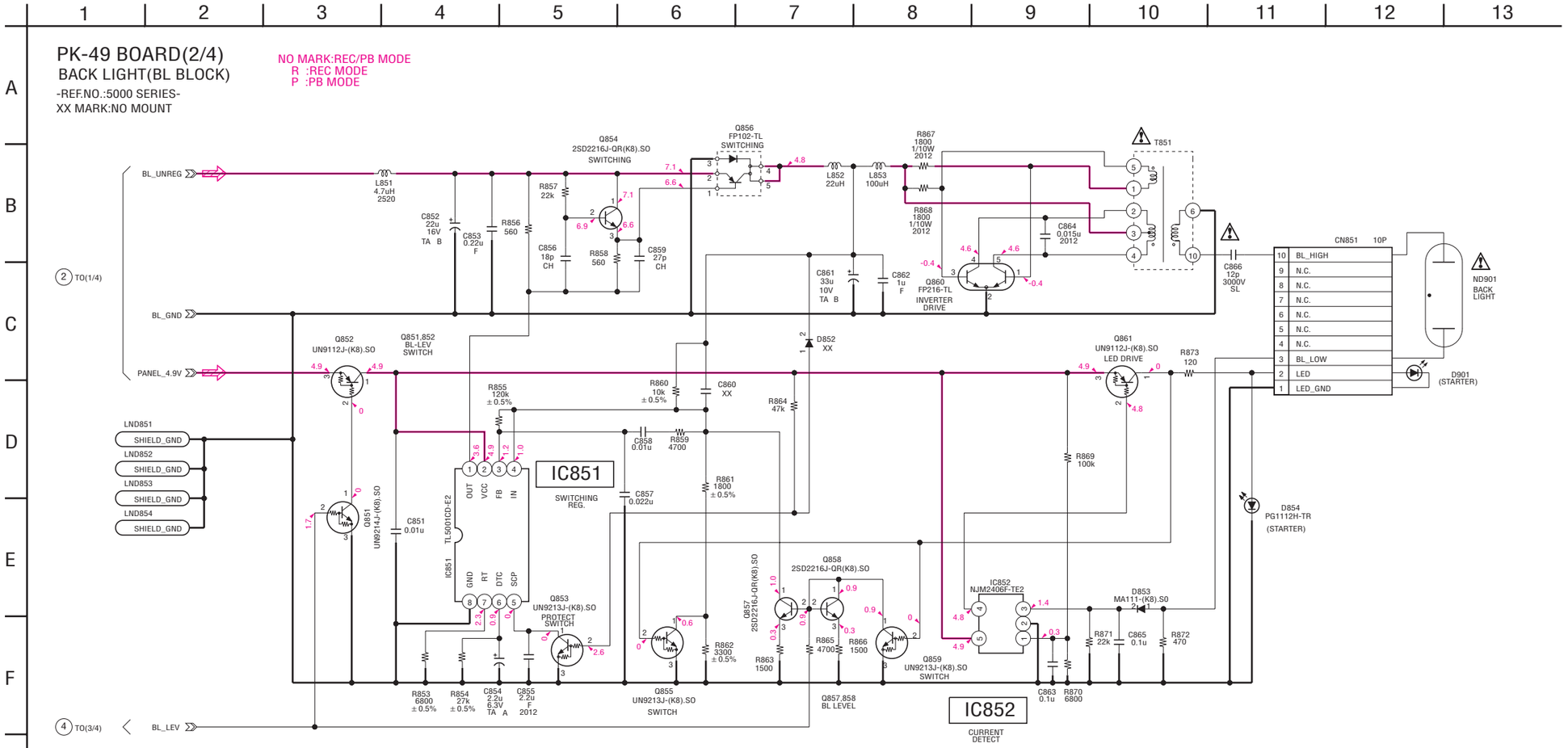
C705 22u 6.3V
SE701
R704 XX
C706 0.22u B
R703 0
IC702 TA6009FN(EL)
S1A
S1B
GUARD
OUT
GND
TRIP
AO
BI
BO
VCC
C710 0.47u B
R713 11k ±0.5%
R715 150k
C711 68p CH
LND701 DUMMY
IC702 SHOCK SENSOR AMP
L702 47uH 2520

C701 XX B
C702 XX 10V
C703 XX B
C704 XX B
IC701 XX
VCC
NC
SP IN
AUX
AM
SUSPEND
NC
GND
NC
SPOUT-2
SPOUT-1
BIAS
EVR
NC
C707 XX 10V
C708 XX B
R709 XX
R710 XX
R706 XX
R711 XX
C709 XX
R707 XX
R725 XX
R702 XX
L701 XX
R729 0
BT701 (LITHIUM BATTERY)

S701 MENU
R716 1800
R718 2700
GURUPON SWITCH
SB-N6355
COMMON
UP
SET
LEFT
RIGHT
COMMON
DOWN
R717 1800 COMMON
R719 2700
S702 DISPLAY
S704 VOLUME (+)
S706 VOLUME (-)
S708 LCD ON/OFF
R720 4700
R722 6800
R723 33k
S705 (FLASH)
R721 4700

For schematic diagram

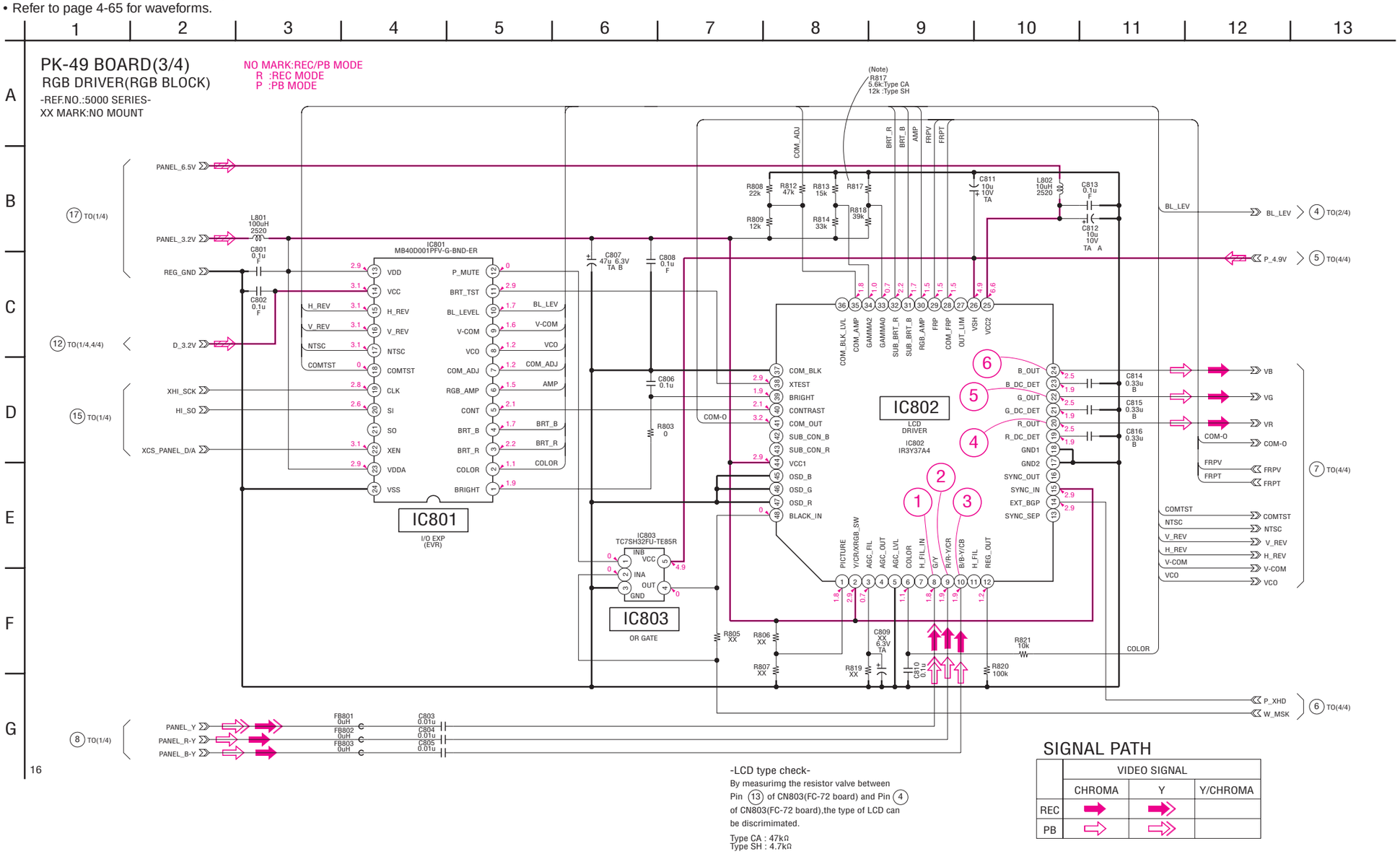
• Refer to page 4-31 for printed wiring board.



Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

For schematic diagram

- Refer to page 4-31 for printed wiring board.
- Refer to page 4-65 for waveforms.



For schematic diagram
- Refer to page 4-31 for printed wiring board.
- Refer to page 4-65 for waveforms.

PK-49 BOARD(4/4)

TG(TG BLOCK)

-REF.NO.:5000 SERIES-

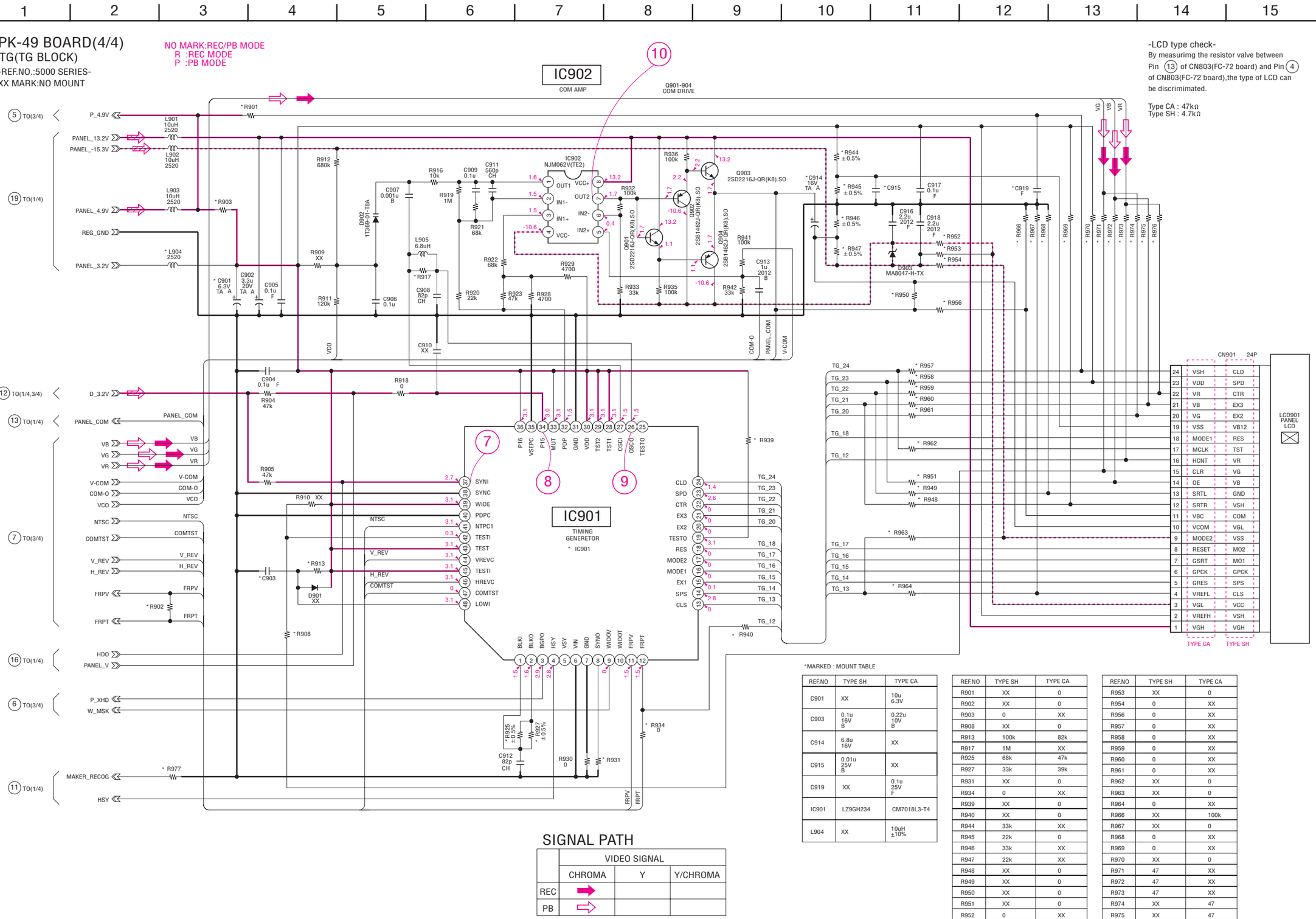
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

-LCD type check-

By measurimg the resistor valve between Pin (13) of CN803(FC-72 board) and Pin (4) of CN803(FC-72 board),the type of LCD can be discrimimated.

Type CA : 47kΩ
Type SH : 4.7kΩ



SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

*MARKED : MOUNT TABLE

REF.NO	TYPE SH	TYPE CA
C901	XX	10u 6.3V
C903	0.1u 16V B	0.22u 10V B
C914	6.8u 16V	XX
C915	0.01u 25V B	XX
C919	XX	0.1u 25V F
IC901	LZ9GH234	CM7018L3-T4
L904	XX	10uH ±10%

REF.NO	TYPE SH	TYPE CA
R901	XX	0
R902	XX	0
R903	0	XX
R908	XX	0
R913	100k	82k
R917	1M	XX
R925	68k	47k
R927	33k	39k
R931	XX	0
R934	0	XX
R939	XX	0
R940	XX	0
R944	33k	XX
R945	22k	0
R946	33k	XX
R947	22k	XX
R948	XX	0
R949	XX	0
R950	XX	0
R951	XX	0
R952	0	XX

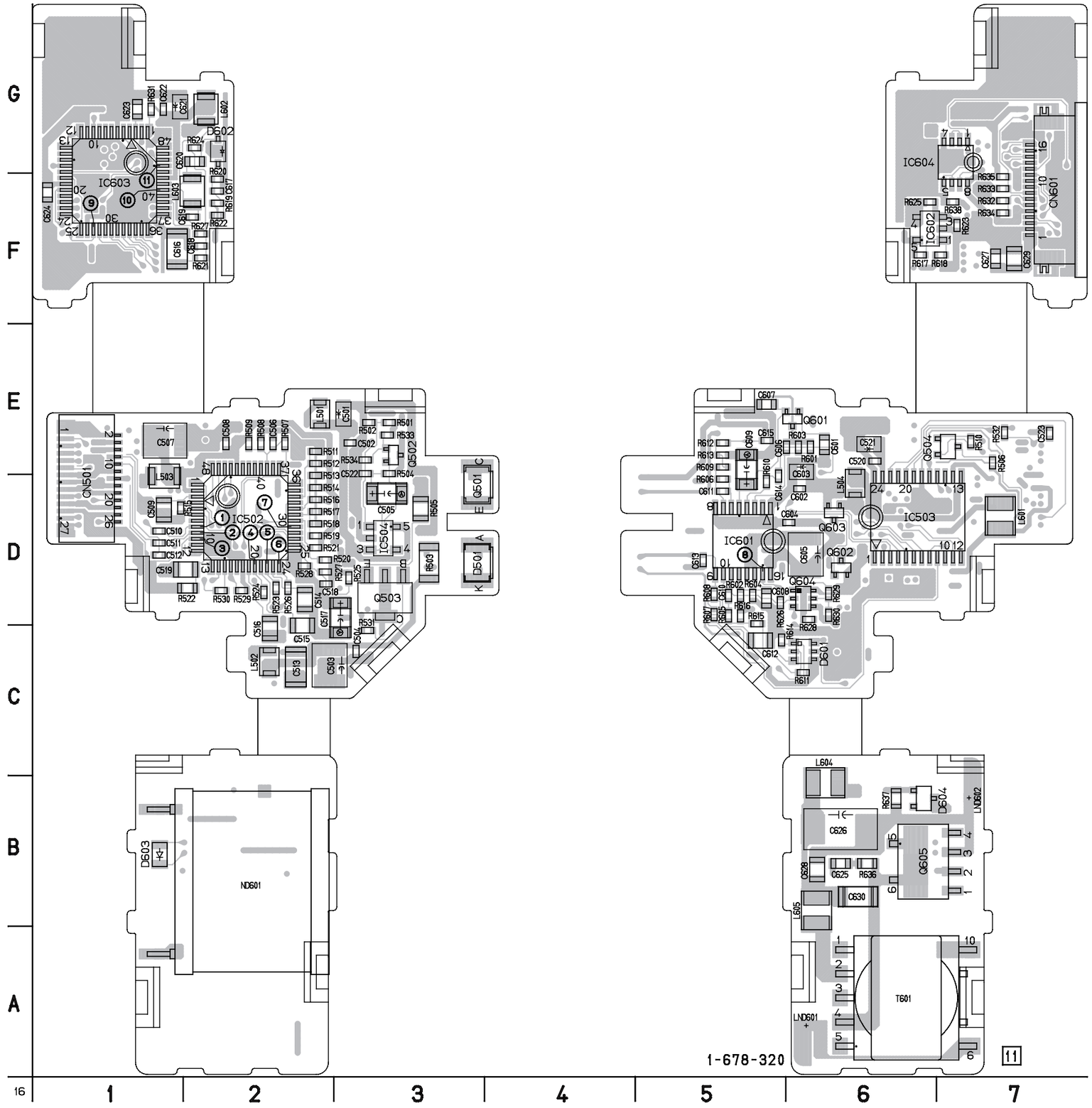
REF.NO	TYPE SH	TYPE CA
R953	XX	0
R954	0	XX
R956	0	XX
R957	0	XX
R958	0	XX
R959	0	XX
R960	0	XX
R961	0	XX
R962	XX	0
R963	XX	0
R964	0	XX
R966	XX	100k
R967	XX	0
R968	0	XX
R969	0	XX
R970	XX	0
R971	47	XX
R972	47	XX
R973	47	XX
R974	XX	47
R975	XX	47
R976	XX	47
R977	4700	47k

VF-143 (RGB DRIVE, TG) PRINTED WIRING BOARD (Suffix No. -11)

— Ref. No. VF-143 Board; 4,000 Series —

VF-143 BOARD(SIDE A)

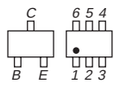
VF-143 BOARD(SIDE B)



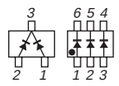
For printed wiring boards

- Refer to page 4-70 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

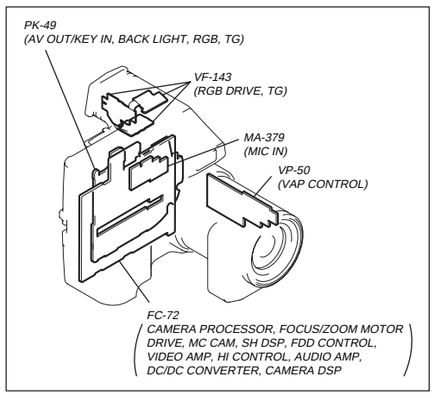
Transistor



Diode



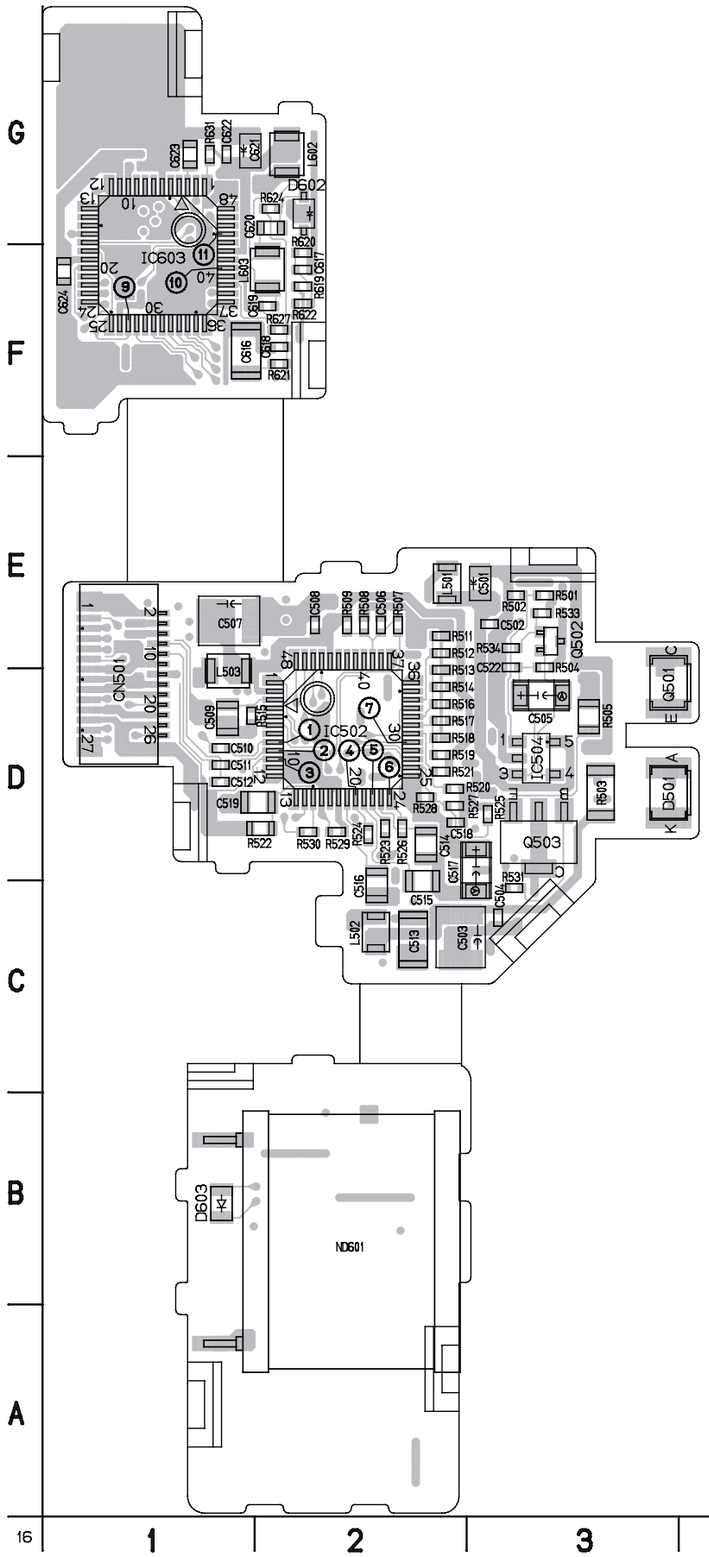
There are few cases that the part printed on this diagram isn't mounted in this model.


PK-49
(AV OUT/KEY IN, BACK LIGHT, RGB, TG)
VF-143
(RGB DRIVE, TG)
MA-379
(MIC IN)
VP-50
(VAP CONTROL)
FC-72
CAMERA PROCESSOR, FOCUS/ZOOM MOTOR DRIVE, MC CAM, SH DSP, FDD CONTROL, VIDEO AMP, HI CONTROL, AUDIO AMP, DC/DC CONVERTER, CAMERA DSP

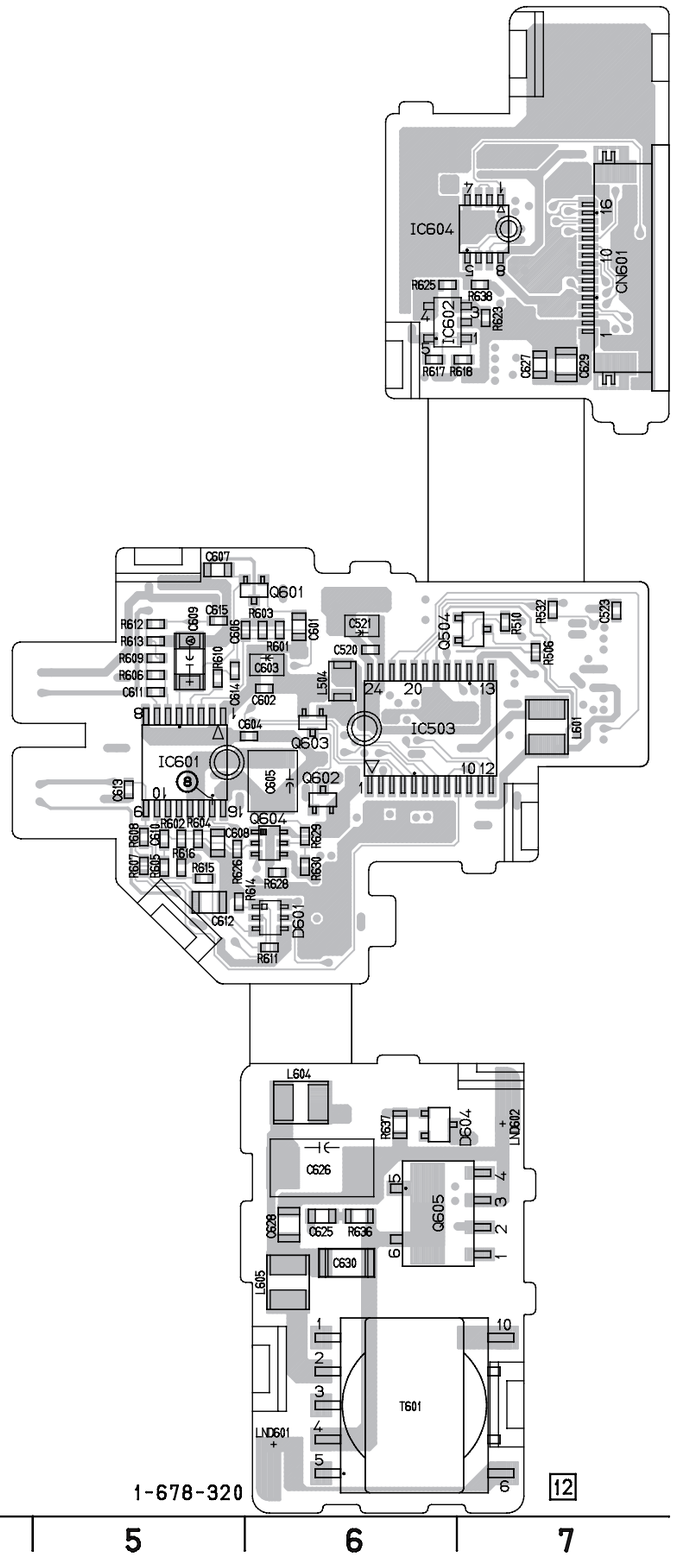
VF-143 (RGB DRIVE, TG) PRINTED WIRING BOARD (Suffix No. -12)

— Ref. No. VF-143 Board; 4,000 Series —

VF-143 BOARD(SIDE A)



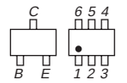
VF-143 BOARD(SIDE B)



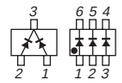
For printed wiring boards

- Refer to page 4-71 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

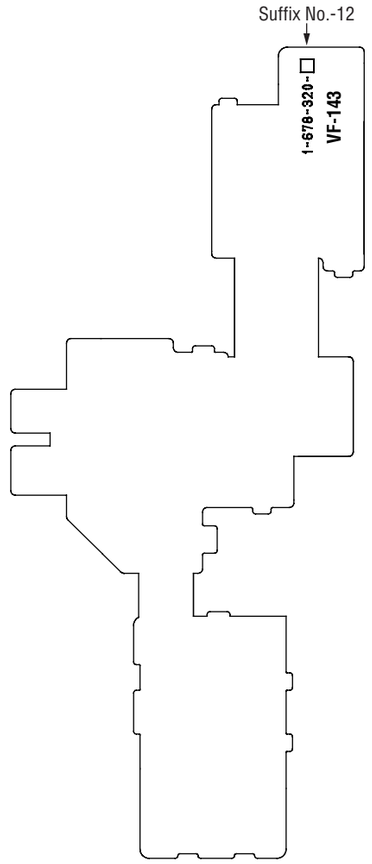
Transistor



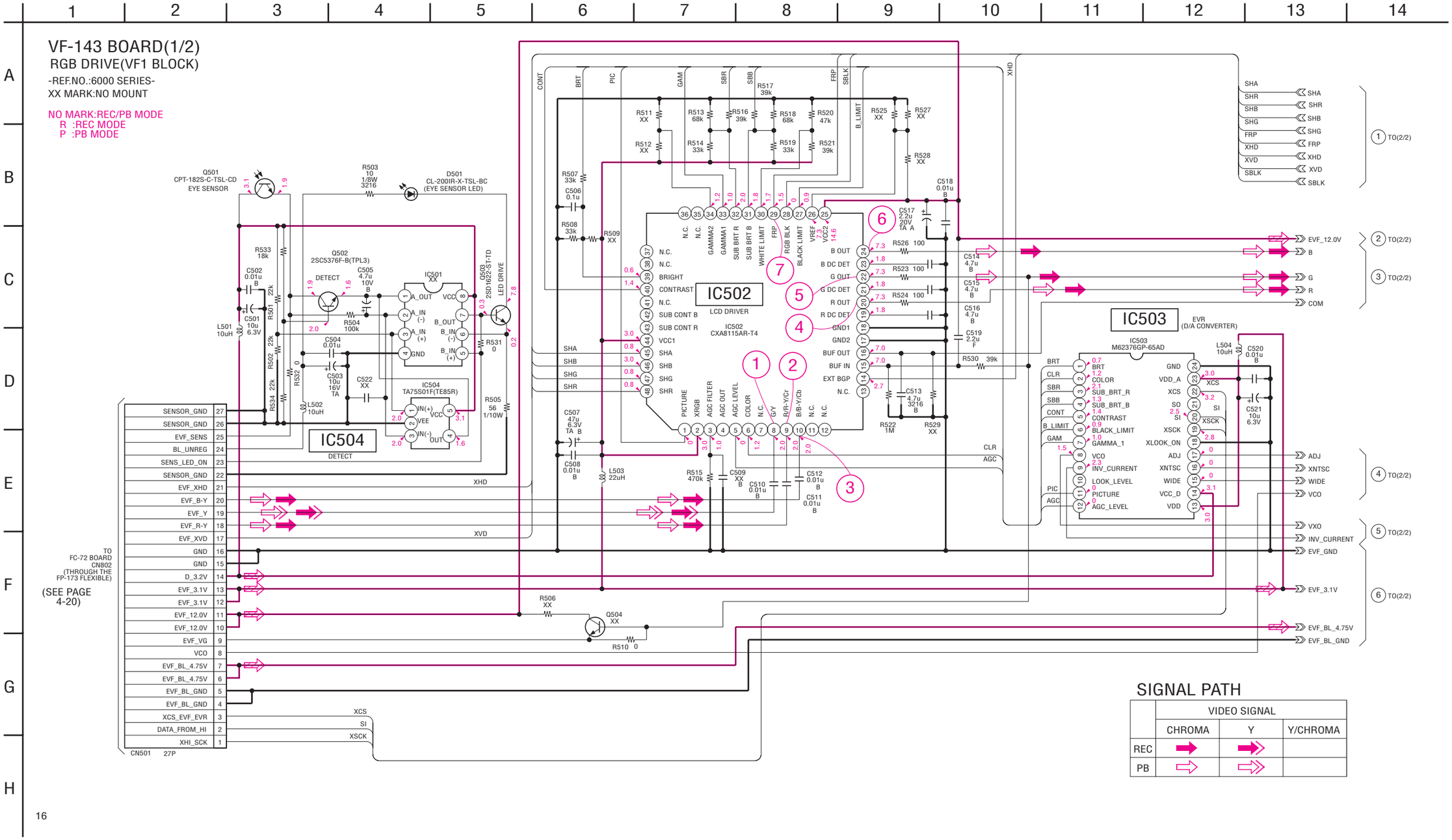
Diode



There are few cases that the part printed on this diagram isn't mounted in this model.



For schematic diagram
- Refer to page 4-43 for printed wiring board.
- Refer to page 4-66 for waveforms.

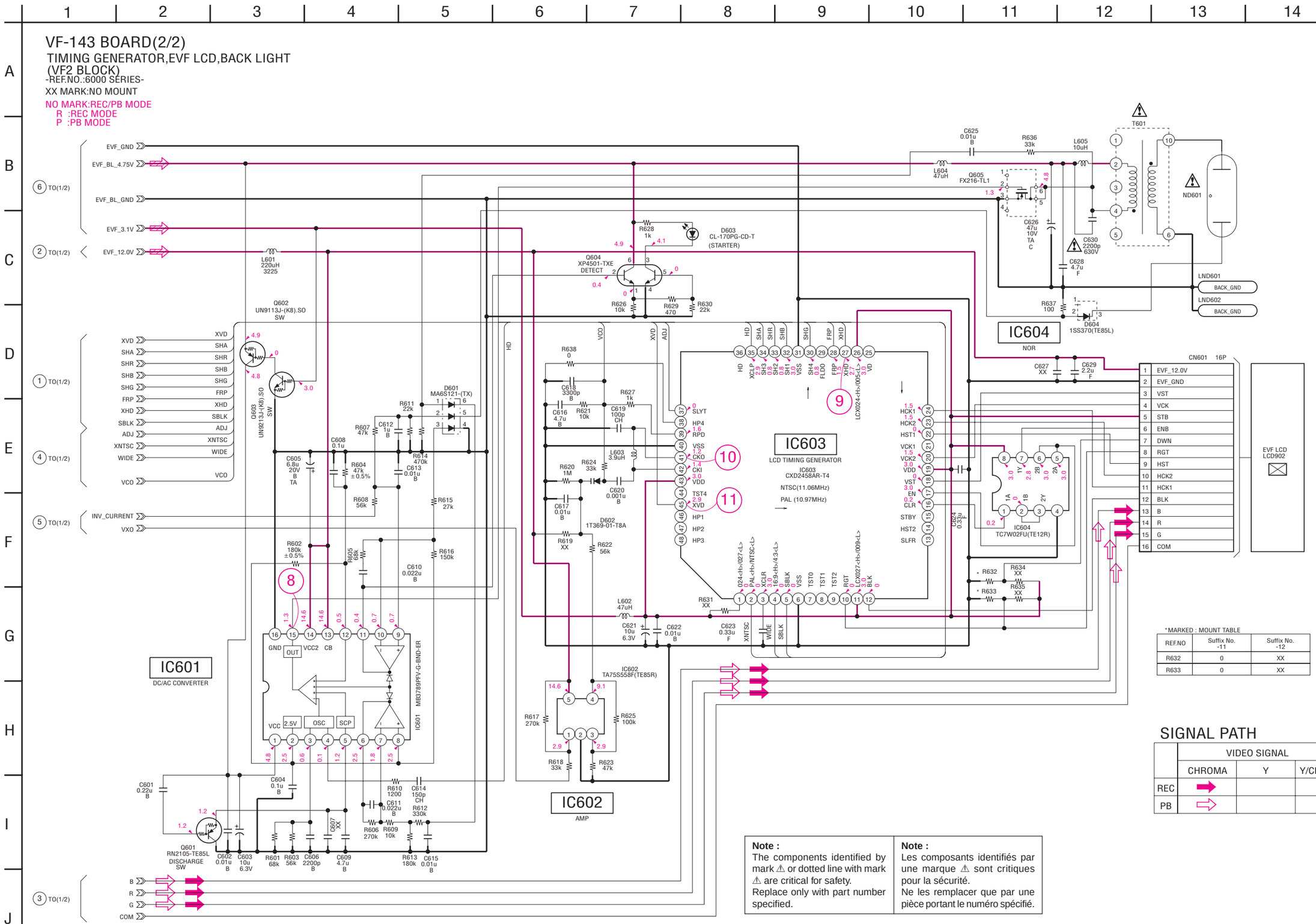


For schematic diagram
- Refer to page 4-43 for printed wiring board.
- Refer to page 4-66 for waveforms.

VF-143 BOARD(2/2)

TIMING GENERATOR,EVF LCD,BACK LIGHT (VF2 BLOCK)

-REF.NO.:6000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE



*MARKED : MOUNT TABLE

REF.NO	Suffix No. -11	Suffix No. -12
R632	0	XX
R633	0	XX

SIGNAL PATH

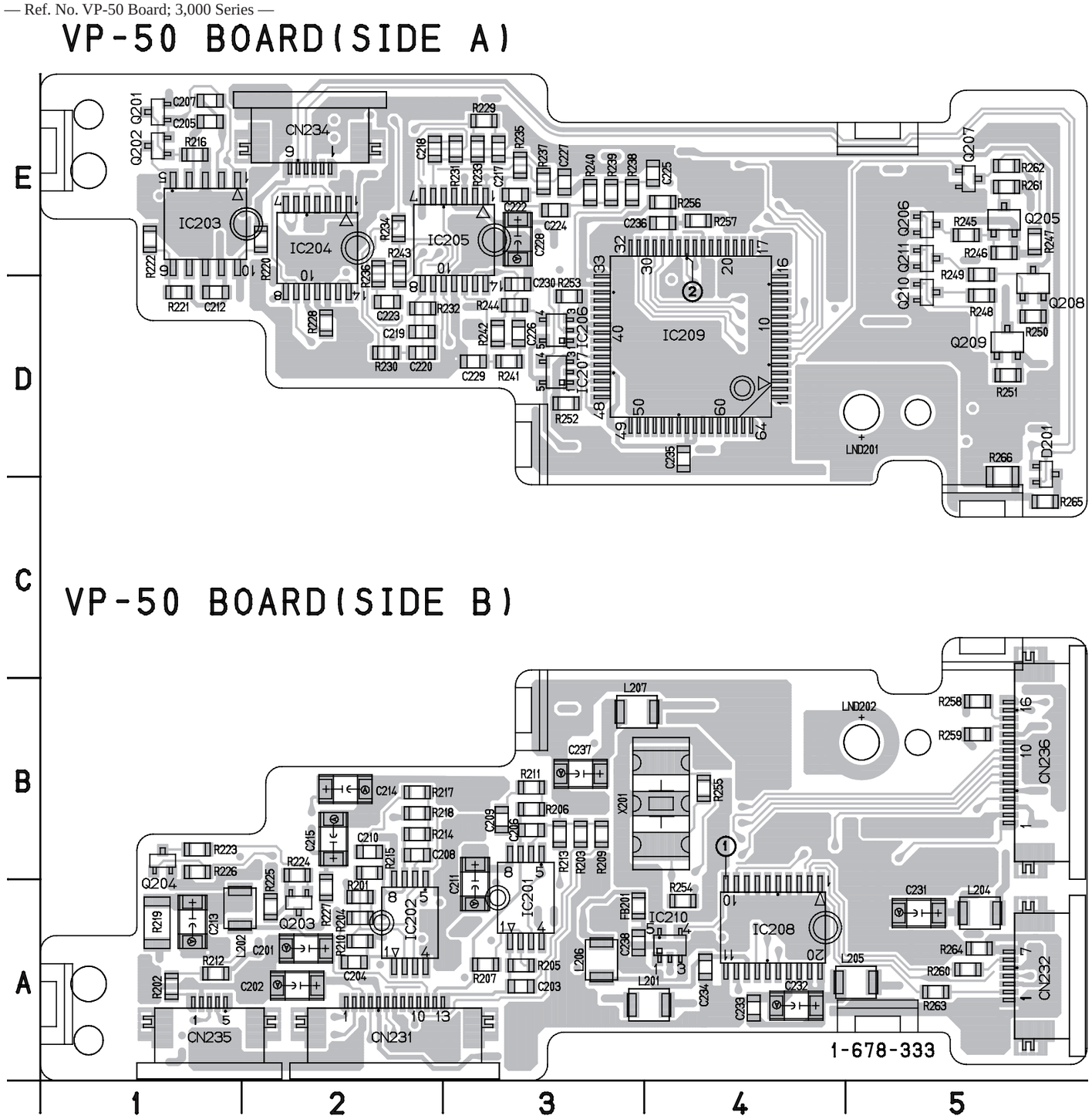
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

VP-50 (VAP CONTROL) PRINTED WIRING BOARD

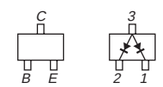
— Ref. No. VP-50 Board; 3,000 Series —



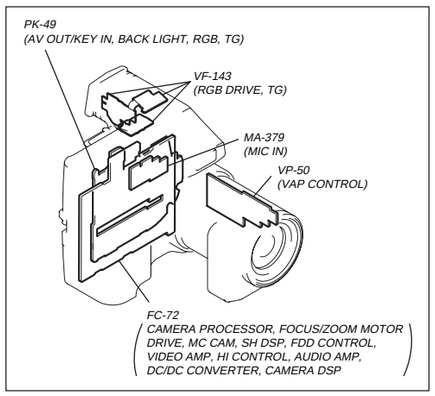
For printed wiring boards

- Refer to page 4-71 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.
- Chip parts

Transistor Diode

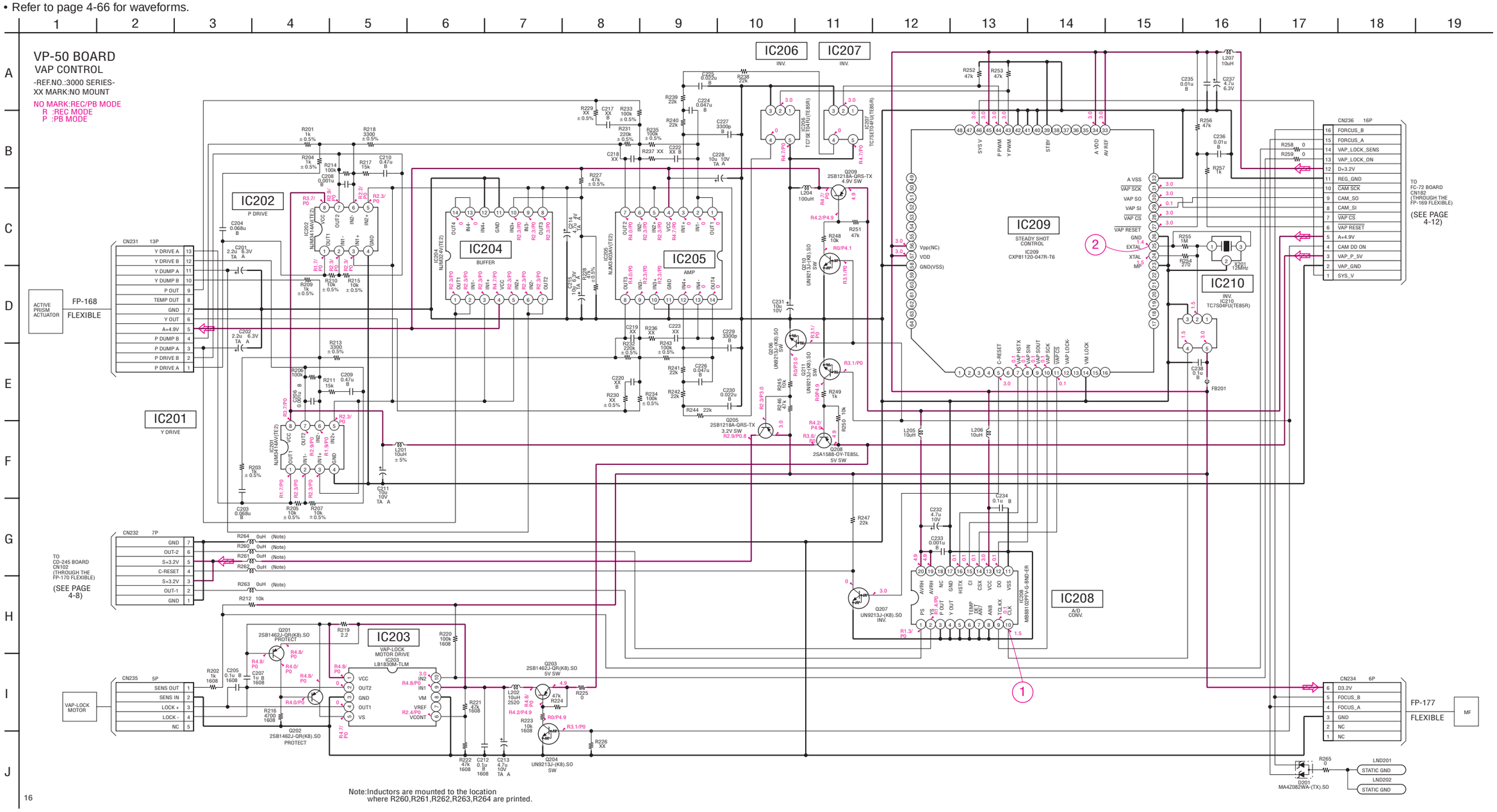


There are few cases that the part printed on this diagram isn't mounted in this model.


PK-49
(AV OUT/KEY IN, BACK LIGHT, RGB, TG)
VF-143
(RGB DRIVE, TG)
MA-379
(MIC IN)
VP-50
(VAP CONTROL)
FC-72
CAMERA PROCESSOR, FOCUS/ZOOM MOTOR DRIVE, MC CAM, SH DSP, FDD CONTROL, VIDEO AMP, HI CONTROL, AUDIO AMP, DC/DC CONVERTER, CAMERA DSP

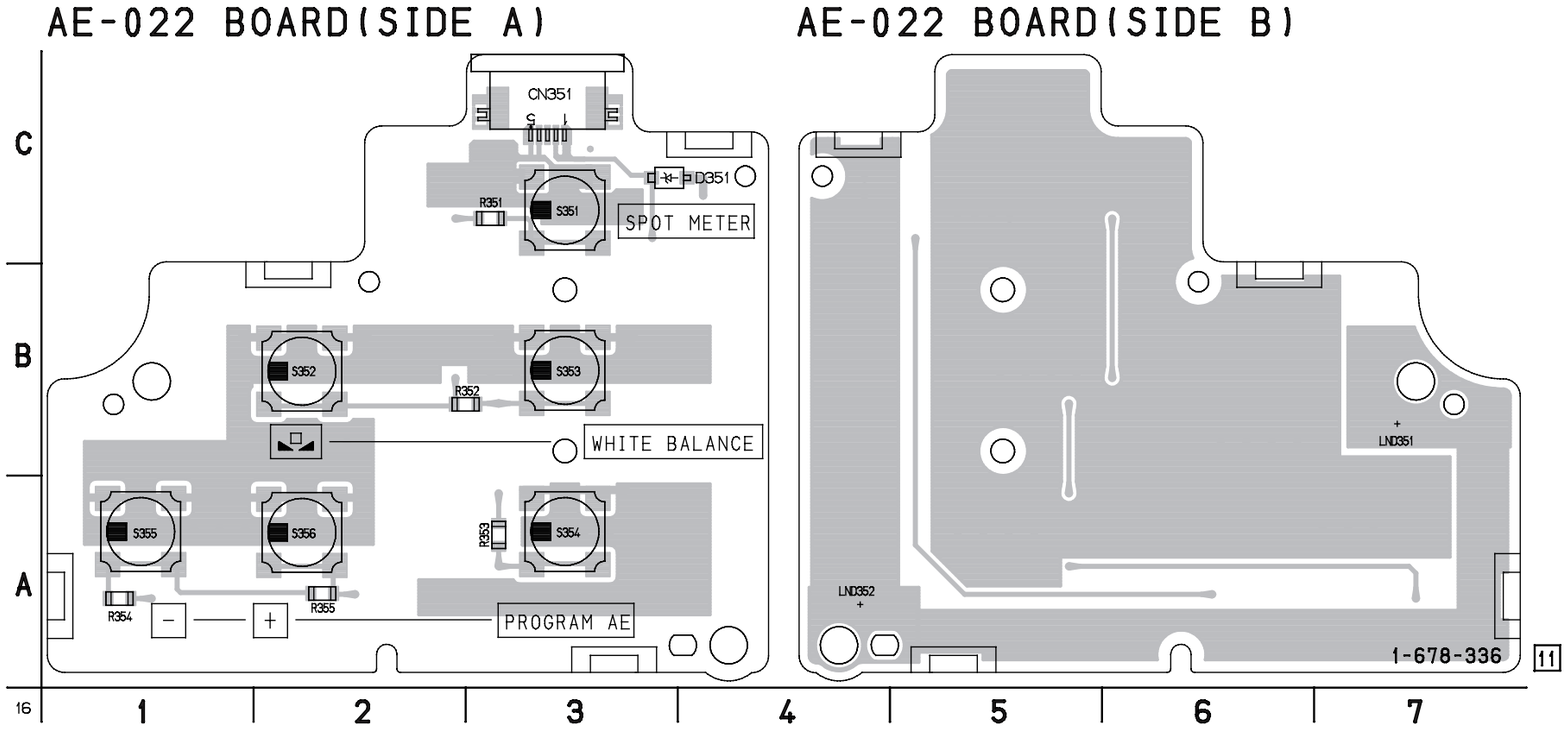
For schematic diagram

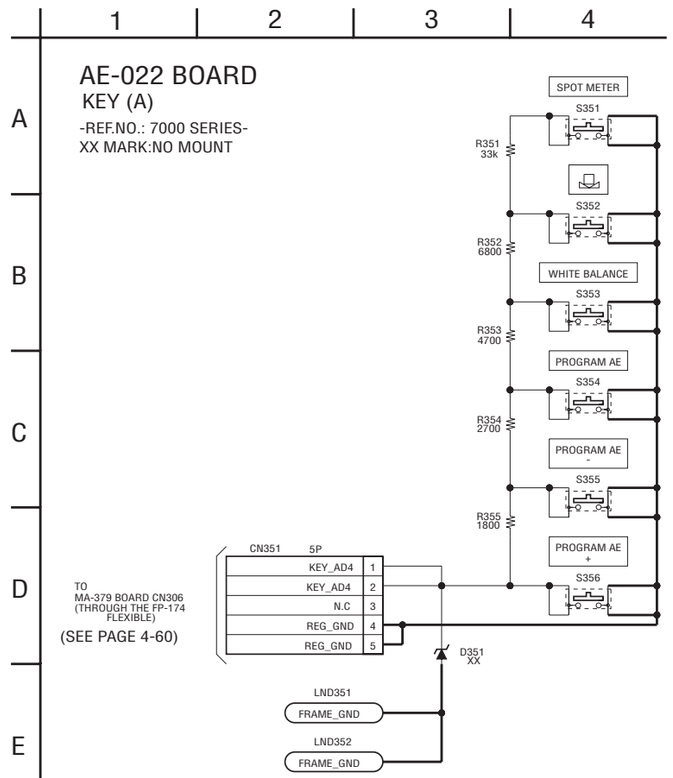
• Refer to page 4-66 for waveforms.



AE-022 (KEY (A)) PRINTED WIRING BOARD

— Ref. No. AE-022 Board; 7,000 Series —

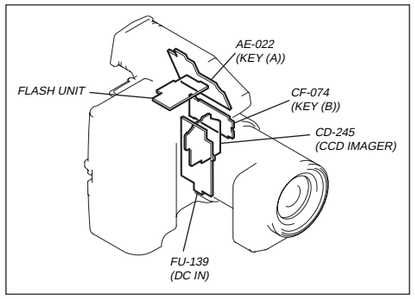




For printed wiring boards

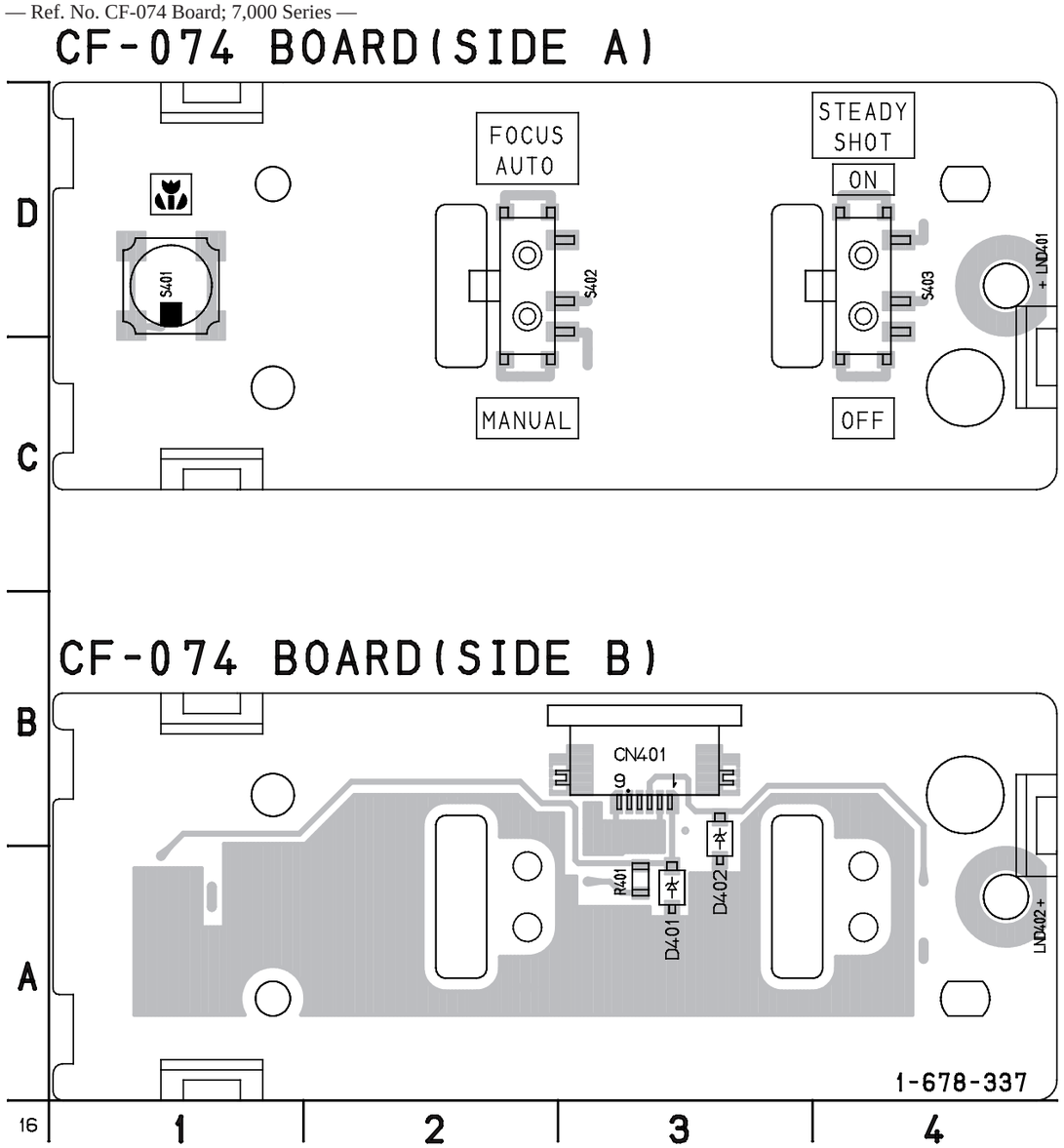
- Refer to page 4-71 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.

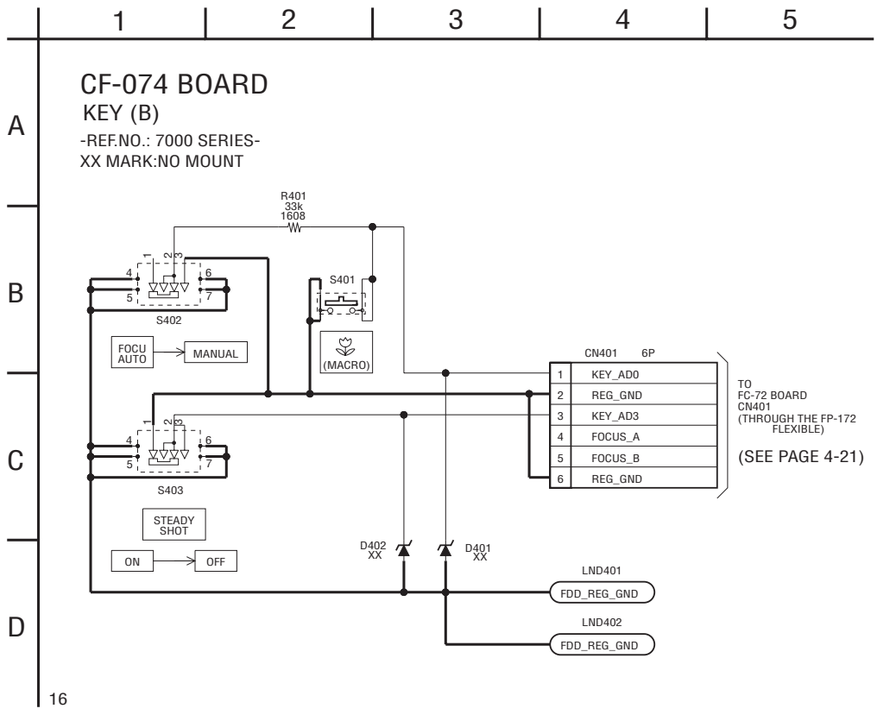
There are few cases that the part printed on this diagram isn't mounted in this model.



CF-074 (KEY (B)) PRINTED WIRING BOARD

— Ref. No. CF-074 Board; 7,000 Series —

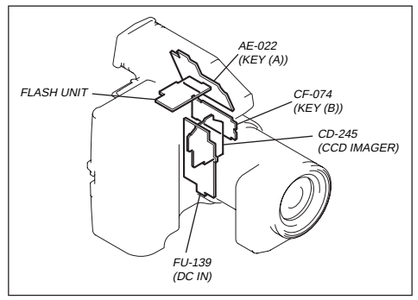




For printed wiring boards

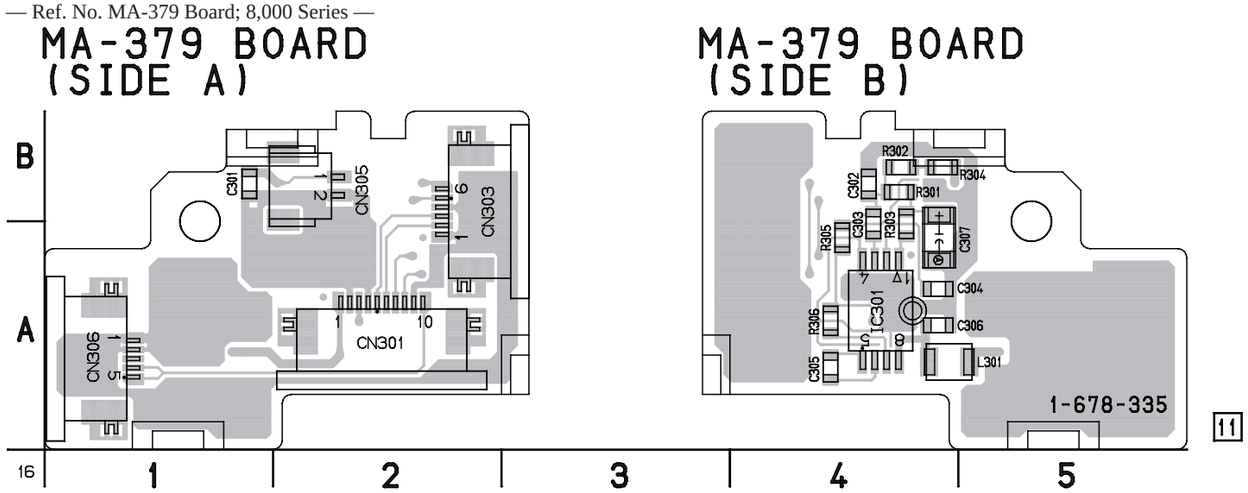
- Refer to page 4-72 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.

There are few cases that the part printed on this diagram isn't mounted in this model.



MA-379 (MIC IN) PRINTED WIRING BOARD

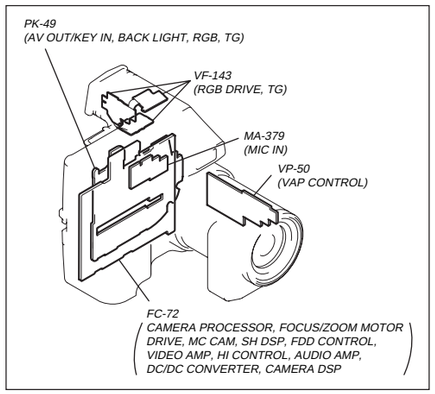
— Ref. No. MA-379 Board; 8,000 Series —

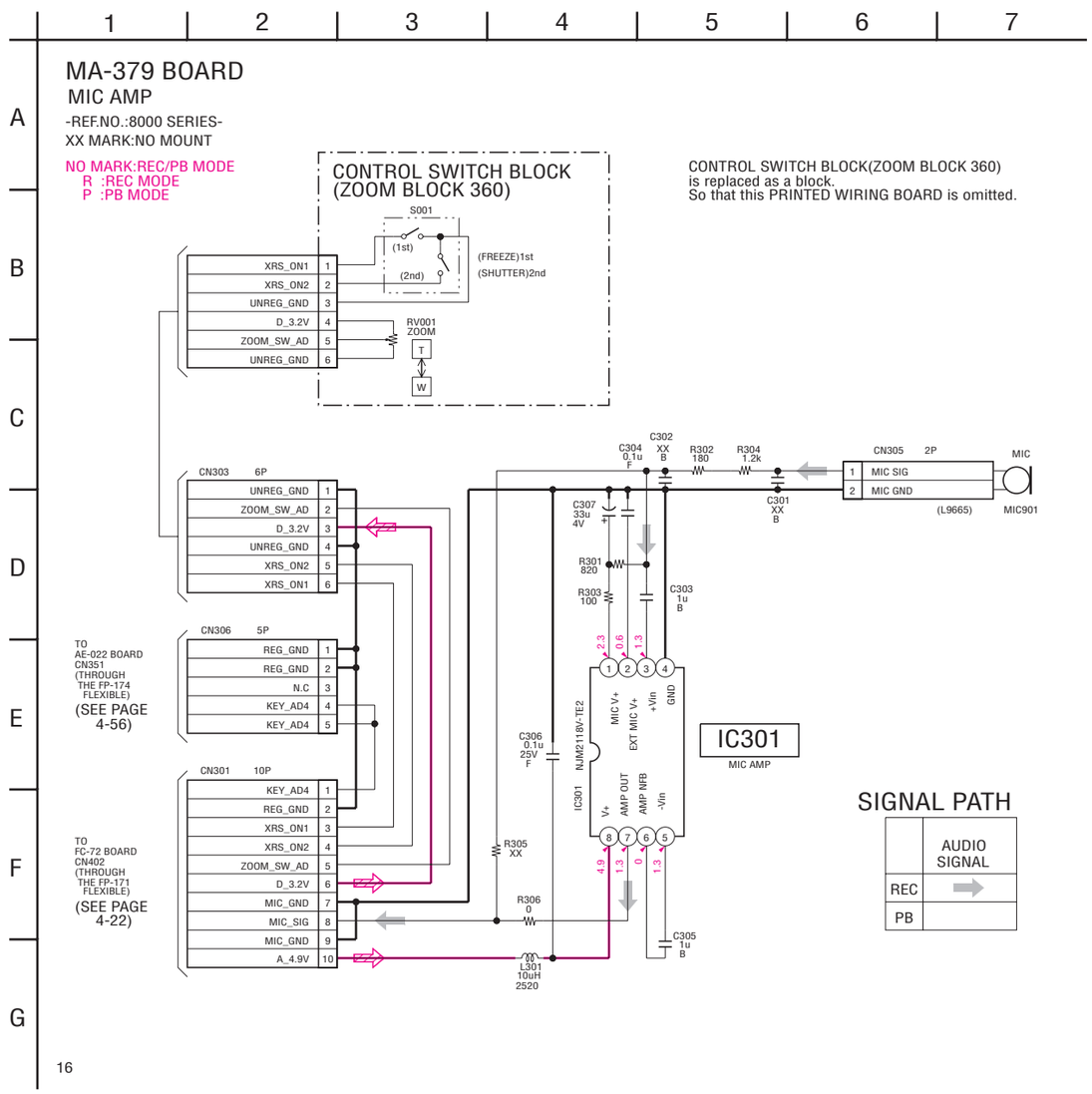


For printed wiring boards

- Refer to page 4-72 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.

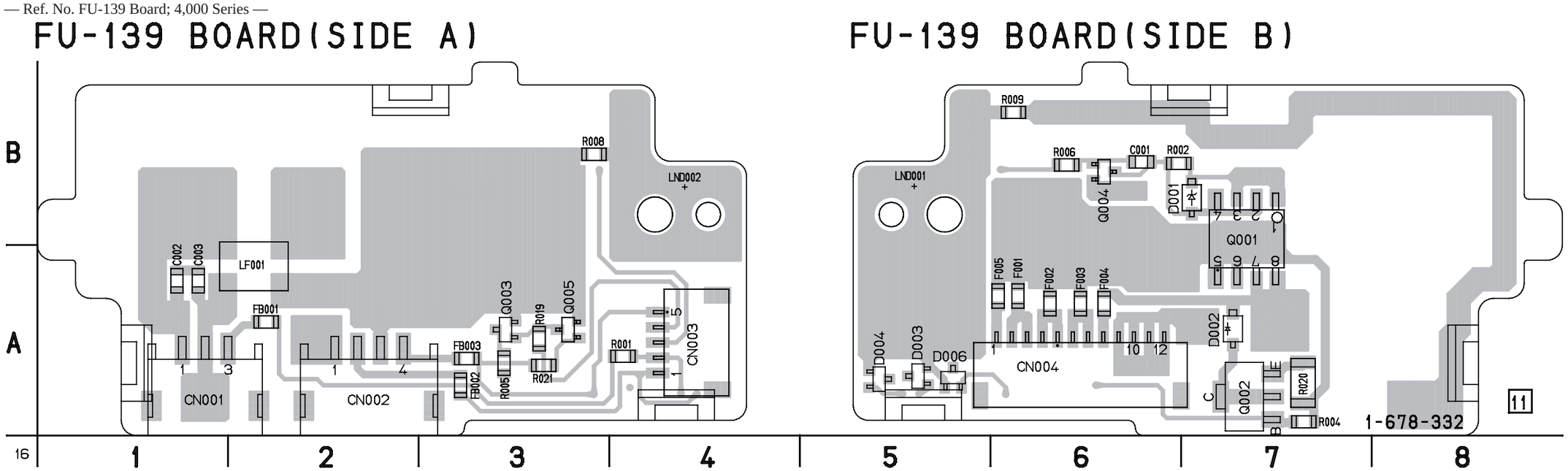
There are few cases that the part printed on this diagram isn't mounted in this model.





FU-139 (DC IN) PRINTED WIRING BOARD

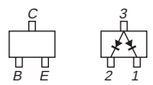
— Ref. No. FU-139 Board; 4,000 Series —



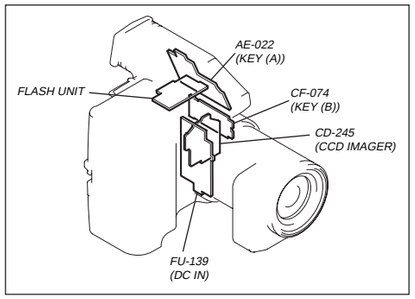
For printed wiring boards

- Refer to page 4-72 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.
- Chip parts

Transistor Diode

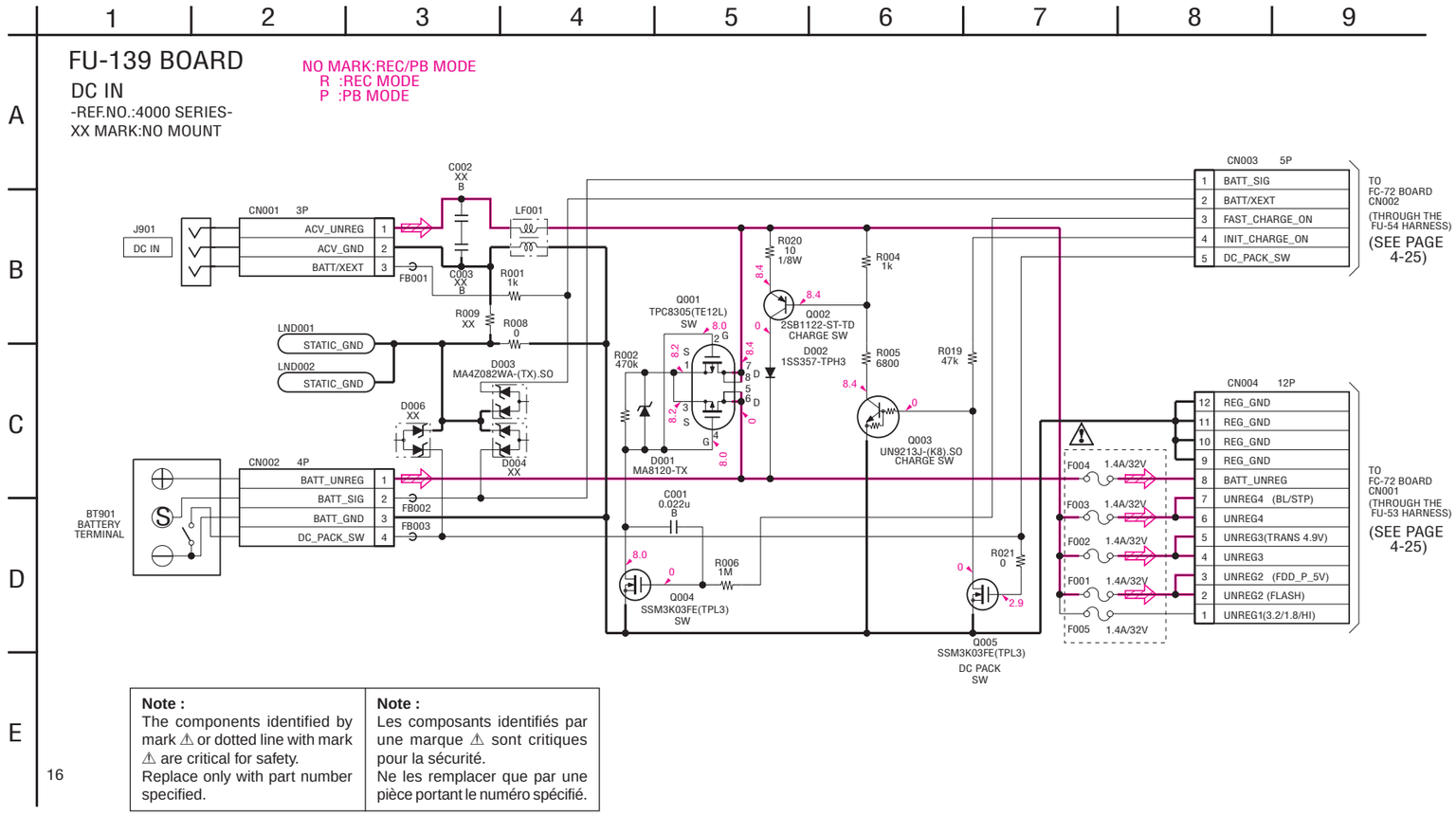


There are few cases that the part printed on this diagram isn't mounted in this model.



For schematic diagram

• Refer to page 4-61 for printed wiring board.

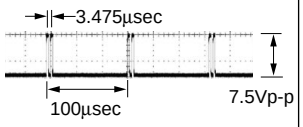


Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

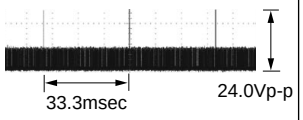
4-3. WAVEFORMS

CD-245 BOARD
REC/PB

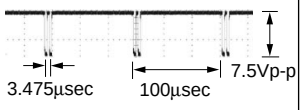
① IC101 ①,③



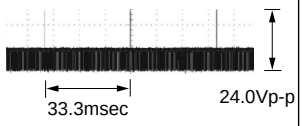
② IC101 ②



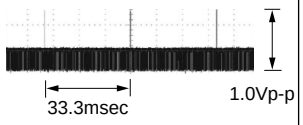
③ IC101 ④,⑥



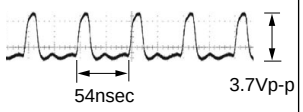
④ IC101 ⑤



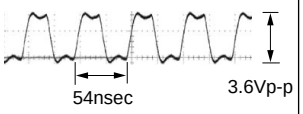
⑤ IC101 ⑧



⑥ IC101 ⑭

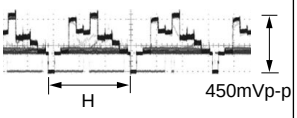


⑦ IC101 ⑮,⑯

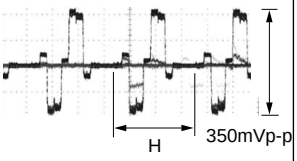


PK-49 BOARD
REC/PB

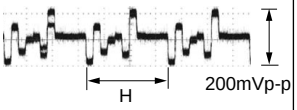
① IC802 ⑧



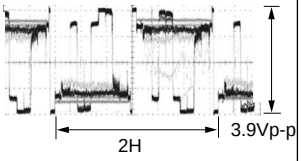
② IC802 ⑨



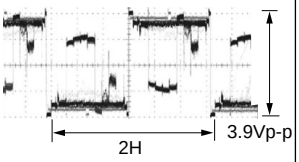
③ IC802 ⑩



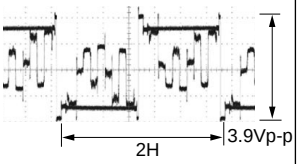
④ IC802 ⑳



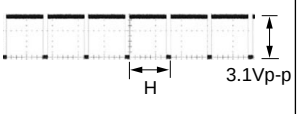
⑤ IC802 ㉒



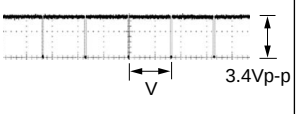
⑥ IC802 ㉔



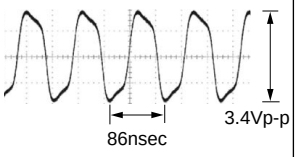
⑦ IC901 ㊲



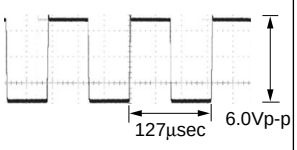
⑧ IC901 ㉞



⑨ IC901 ㉖



⑩ IC902 ⑦



VF-143 BOARD

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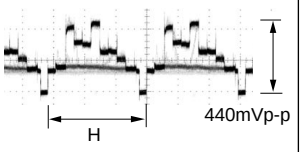
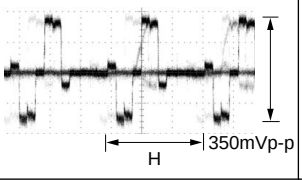
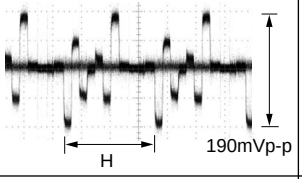
① IC502 ⑧



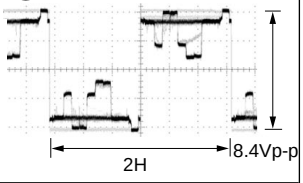
② IC502 ⑨



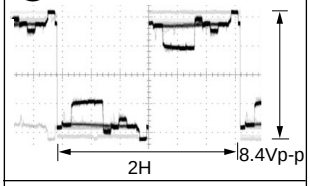
③ IC502 ⑩



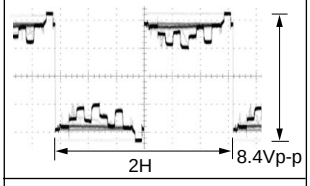
④ IC502 ⑳



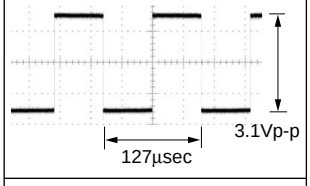
⑤ IC502 ㉒



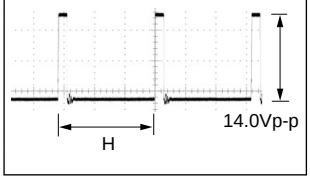
⑥ IC502 ㉔



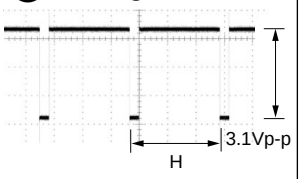
⑦ IC502 ㉙



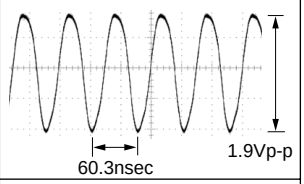
⑧ IC601 ⑮



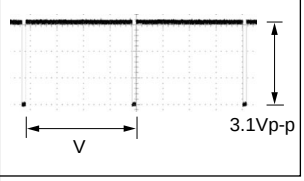
⑨ IC603 ㉗



⑩ IC603 ㊶



⑪ IC603 ㊺



VP-50 BOARD

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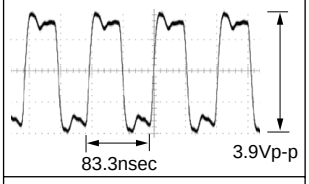
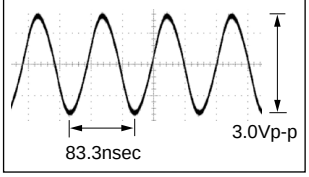
① IC208 ⑩



② IC209 ㉕



Waveforms and parts location of the FC-72 board are not shown.
Pages from 4-67 to 4-68 are not shown.

4-4. PARTS LOCATION

CD-245 BOARD (SIDE A)

C160	C-3
C161	C-2
C165	C-3
D101	A-3
L150	B-3
R111	A-3
R112	A-3

CD-245 BOARD (SIDE B)

C101	A-7
C102	A-6
C103	A-5
C104	A-6
C105	A-5
C106	A-6
C107	B-6
C108	A-6
C109	B-7
C110	B-7
C111	A-6
C150	C-7
C151	C-6
C152	C-6
C153	C-6
C154	C-6
C155	C-7
C156	C-7
C157	C-7
C158	C-7
C159	C-7
C162	B-6
C163	B-7
C164	B-7
CN101	A-5
CN102	B-5
IC101	B-6
IC150	B-7
L101	A-6
Q101	A-6
Q102	B-6
R101	B-5
R102	A-5
R103	A-5
R104	A-5
R105	A-5
R106	A-6
R107	A-6
R108	B-7
R109	B-7
R110	A-6
R150	C-7
R151	C-6
R152	C-6
R153	C-7
R154	C-6
R155	B-6
R156	B-6
R157	B-7
R158	B-7
R159	B-6
R160	B-7
SE150	C-6
SE151	C-6

PK-49 BOARD (SIDE A)

C803	D-4
C804	D-4
C805	D-4
C806	D-4
C807	D-4
C808	D-4
C809	D-4
C810	D-4
C811	E-5
C812	E-5
C813	E-4
C852	E-3
C853	E-3
C854	E-3
C856	E-3
C857	D-3
C858	D-3
C859	E-3
C860	D-3
C861	E-2
C862	E-3
C864	E-2
C901	D-6
C902	D-7
C903	E-6
C904	E-6
C905	C-7
C907	F-6
C908	F-7
C910	F-6
C912	E-6
C914	D-7
C915	C-6
C917	C-6
D701	B-2
D702	A-3
D703	A-3
D782	F-4
D783	F-5
D785	C-1
D789	F-5
D790	F-4
D852	F-3
D854	C-3
D901	E-6
D903	D-7
FB781	E-4
FB782	E-5
FB783	E-5
FB784	E-5
FB785	E-4
FB787	C-1
FB788	C-2
FB789	C-2
FB790	C-1
FB791	B-2
FB801	D-4
FB802	D-4
FB803	D-4
IC802	D-4
IC901	E-6
L801	D-5
L802	E-5
L851	E-3
L901	D-7
L902	D-5
L903	D-5
L904	D-6
L905	F-7
Q854	E-3
Q855	D-3
Q856	E-3
Q857	D-3
Q858	D-3
Q859	D-3
Q860	E-2
Q861	C-3
R708	B-2
R712	A-3
R714	A-3
R716	A-6
R717	A-6
R718	A-6
R719	A-6
R720	C-1
R721	A-2
R722	D-1
R723	D-1
R724	G-6
R729	B-7
R782	C-2
R787	C-1
R803	E-4
R807	D-4
R819	D-4
R855	D-3
R856	E-3
R857	E-3
R858	E-3
R859	D-3
R860	D-3
R861	D-3
R862	D-3
R863	D-3
R865	D-3
R866	D-3
R873	C-3
R902	E-7
R903	D-6
R904	F-6
R905	E-6
R913	E-6
R916	F-6
R917	F-7
R918	F-6
R925	E-6
R927	E-6
R930	E-6
R931	E-6
R934	E-7
R939	E-7
R944	C-6
R945	C-6
R950	D-7
R952	D-7
R953	D-7
R954	D-7
R956	D-7
R958	D-6
R959	D-6
R960	D-7
R963	C-7
R967	C-7
R968	C-6
R969	C-6
R970	D-6
R971	C-6
R972	D-6
R973	C-6
R975	D-6
R977	C-5
S701	A-7
S702	A-5
S703	B-5
S704	D-1
S705	A-2
S706	C-1
S707	G-6
S708	D-1
S709	F-7

PK-49 BOARD (SIDE B)

BT701	B-6
C701	B-2
C702	B-3
C703	B-2
C704	B-2
C705	A-5
C706	A-5
C707	A-2
C708	A-2
C709	A-2
C710	B-5
C711	B-5
C781	C-6
C782	C-6
C783	C-7
C801	D-2
C802	D-2
C814	E-3
C815	E-3
C816	D-3
C851	E-5
C855	E-5
C863	D-5
C865	D-5
C866	D-6
C906	F-1
C909	F-2
C911	F-2
C913	F-2
C916	D-1
C918	D-1
C919	D-2
CN701	D-3
CN702	B-1
CN781	E-3
CN851	C-5
CN901	C-1
D784	E-4
D786	C-7
D787	C-7
D788	C-7
D853	D-5
D902	F-1
FB786	E-4
IC701	A-2
IC701	B-2
IC702	A-5
IC801	E-3
IC803	D-4
IC851	D-5
IC852	D-5
IC902	F-2
J781	B-7
L701	B-3
L702	B-5
L852	E-5
L853	E-6
Q851	D-5
Q852	D-5
Q853	E-5
Q901	F-2
Q902	F-2
Q903	F-2
Q904	F-2
R702	B-2
R703	A-5
R704	A-5
R706	A-2
R707	A-2
R709	B-1
R710	B-1
R711	A-2
R713	B-5
R715	B-5
R725	B-1
R726	B-1
R805	D-4
R806	D-4
R808	E-4
R809	E-4
R812	E-4
R813	E-4
R814	E-4
R817	E-4
R818	E-4
R821	E-4
R853	E-5
R854	E-5
R864	E-5
R867	E-6
R868	E-6
R869	D-5
R870	D-5
R871	D-5
R872	C-5
R874	D-5
R901	D-2
R908	D-2
R909	F-1
R911	F-2
R912	F-1
R919	F-2
R920	F-2
R921	F-1
R922	F-2
R923	F-2
R928	F-2
R929	F-2
R932	F-2
R933	F-2
R935	F-2
R936	F-2
R940	D-2
R941	F-2
R942	F-2
R946	D-1
R947	D-1
R948	D-1
R949	D-2
R951	D-2
R957	D-2
R961	D-2
R962	D-2
R964	C-1
R966	D-1
R974	C-2
R976	C-2
SE701	A-5
T851	D-6

VF-143 BOARD (SIDE A) (Suffix No. -11)

C501	E-3
C502	E-3
C503	C-2
C504	C-3
C505	D-3
C506	E-2
C507	E-1
C508	E-2
C509	D-1
C510	D-1
C511	D-1
C512	D-1
C513	C-2
C514	D-2
C515	C-2
C516	C-2
C517	C-3
C518	D-2
C519	D-2
C522	E-3
C616	F-1
C617	F-2
C618	F-2
C619	F-2
C620	G-2
C621	G-1
C622	G-1
C623	G-1
C624	F-1
CN501	D-1
D501	D-3
D602	G-2
D603	B-1
IC502	D-2
IC504	D-3
IC603	F-1
L501	E-2
L502	C-2
L503	D-1
L602	G-2
L603	F-2
ND601	B-2
Q501	D-3
Q502	E-3
Q503	D-3
R501	E-3
R502	E-3
R503	D-3
R504	E-3
R505	D-3
R507	E-2
R508	E-2
R509	E-2
R511	E-2
R512	E-2
R513	D-2
R514	D-2
R515	D-2
R516	D-2
R517	D-2
R518	D-2
R519	D-2
R520	D-2
R521	D-2
R522	D-2
R523	D-2
R524	D-2
R525	D-3
R526	D-2
R527	D-2
R528	D-2
R529	D-2
R530	D-2
R531	C-3
R533	E-3
R534	E-3
R619	F-2
R620	F-2
R621	F-2
R622	F-2
R624	G-2
R627	F-2
R631	G-1

VF-143 BOARD (SIDE B) (Suffix No. -11)

C520	E-6
C521	E-6
C523	E-7
C601	E-6
C602	D-6
C603	E-6
C604	D-5
C605	D-6
C606	E-5
C607	E-5
C608	D-5
C609	E-5
C610	D-5
C611	D-5
C612	C-5
C613	D-5
C614	D-5
C615	E-5
C625	B-6
C626	B-6
C627	F-7
C628	B-6
C629	F-7
C630	B-6
CN601	F-7
D601	C-6
D604	B-6
IC503	D-6
IC601	D-5
IC602	F-6
IC604	G-7
L504	D-6
L601	D-7
L604	B-6
L605	B-6
Q504	E-7
Q601	E-6
Q602	D-6
Q603	D-6
Q604	D-6
Q605	B-6
R506	E-7
R510	E-7
R532	E-7
R601	E-6
R602	D-5
R603	E-6
R604	D-5
R605	D-5
R606	D-5
R607	D-5
R608	D-5
R609	E-5
R610	D-5
R611	C-6
R612	E-5
R613	E-5
R614	C-5
R615	D-5
R616	D-5
R617	F-6
R618	F-6
R623	F-7
R625	F-6
R626	D-5
R628	D-6
R629	D-6
R630	D-6
R632	F-7
R633	F-7
R634	F-7
R635	F-7
R636	B-6
R637	B-6
R638	F-7
T601	A-6

VF-143 BOARD (SIDE A) (Suffix No. -12)

C501	E-3	Q501	D-3
C502	E-3	Q502	E-3
C503	C-2	Q503	D-3
C504	C-3		
C505	D-3	R501	E-3
C506	E-2	R502	E-3
C507	E-1	R503	D-3
C508	E-2	R504	E-3
C509	D-1	R505	D-3
C510	D-1	R507	E-2
C511	D-1	R508	E-2
C512	D-1	R509	E-2
C513	C-2	R511	E-2
C514	D-2	R512	E-2
C515	C-2	R513	D-2
C516	C-2	R514	D-2
C517	C-3	R515	D-2
C518	D-2	R516	D-2
C519	D-2	R517	D-2
C522	E-3	R518	D-2
C616	F-1	R519	D-2
C617	F-2	R520	D-2
C618	F-2	R521	D-2
C619	F-2	R522	D-2
C620	G-2	R523	D-2
C621	G-1	R524	D-2
C622	G-1	R525	D-3
C623	G-1	R526	D-2
C624	F-1	R527	D-2
		R528	D-2
CN501	D-1	R529	D-2
		R530	D-2
D501	D-3	R531	C-3
D602	G-2	R533	E-3
D603	B-1	R534	E-3
		R619	F-2
IC502	D-2	R620	F-2
IC504	D-3	R621	F-2
IC603	F-1	R622	F-2
		R624	G-2
L501	E-2	R627	F-2
L502	C-2	R631	G-1
L503	D-1		
L602	G-2		
L603	F-2		
ND601	B-2		

VF-143 BOARD (SIDE B) (Suffix No. -12)

C520	E-6	R506	E-7
C521	E-6	R510	E-7
C523	E-7	R532	E-7
C601	E-6	R601	E-6
C602	D-6	R602	D-5
C603	E-6	R603	E-6
C604	D-5	R604	D-5
C605	D-6	R605	D-5
C606	E-5	R606	D-5
C607	E-5	R607	D-5
C608	D-5	R608	D-5
C609	E-5	R609	E-5
C610	D-5	R610	D-5
C611	D-5	R611	C-6
C612	C-5	R612	E-5
C613	D-5	R613	E-5
C614	D-5	R614	C-5
C615	E-5	R615	D-5
C625	B-6	R616	D-5
C626	B-6	R617	F-6
C627	F-7	R618	F-6
C628	B-6	R623	F-7
C629	F-7	R625	F-6
C630	B-6	R626	D-5
		R628	D-6
CN601	F-7	R629	D-6
		R630	D-6
D601	C-6	R636	B-6
D604	B-6	R637	B-6
		R638	F-7
IC503	D-6		
IC601	D-5	T601	A-6
IC602	F-6		
IC604	G-7		
L504	D-6		
L601	D-7		
L604	B-6		
L605	B-6		
Q504	E-7		
Q601	E-6		
Q602	D-6		
Q603	D-6		
Q604	D-6		
Q605	B-6		

VP-50 BOARD (SIDE A)

C205	E-1	R216	E-1
C207	E-1	R220	E-2
C212	D-1	R221	D-1
C218	E-2	R222	E-1
C219	D-2	R228	D-2
C220	D-2	R229	E-3
C222	E-3	R230	D-2
C223	D-2	R231	E-3
C224	E-3	R232	D-2
C225	E-4	R233	E-3
C226	D-3	R234	E-2
C227	E-3	R235	E-3
C228	E-3	R236	E-2
C229	D-3	R237	E-3
C230	D-3	R238	E-3
C235	D-4	R239	E-3
C236	E-4	R240	E-3
		R241	D-3
CN234	E-2	R242	D-3
		R243	E-2
D201	D-5	R244	D-3
		R245	E-5
IC203	E-1	R246	E-5
IC204	E-2	R247	E-5
IC205	E-3	R248	D-5
IC206	D-3	R249	E-5
IC207	D-3	R250	D-5
IC209	D-4	R251	D-5
		R252	D-3
Q201	E-1	R253	D-3
Q202	E-1	R256	E-4
Q205	E-5	R257	E-4
Q206	E-5	R261	E-5
Q207	E-5	R262	E-5
Q208	D-5	R265	D-5
Q209	D-5	R266	D-5
Q210	D-5		
Q211	E-5		

VP-50 BOARD (SIDE B)

C201	A-2	Q203	A-2
C202	A-2	Q204	B-1
C203	A-3		
C204	A-2	R201	A-2
C206	B-3	R202	A-1
C208	B-2	R203	B-3
C209	B-3	R204	A-2
C210	B-2	R205	A-3
C211	A-3	R206	B-3
C213	A-1	R207	A-3
C214	B-2	R209	B-3
C215	B-2	R210	A-2
C231	A-5	R211	B-3
C232	A-4	R212	A-1
C233	A-4	R213	B-3
C234	A-4	R214	B-2
C237	B-3	R215	B-2
C238	A-3	R217	B-2
		R218	B-2
CN231	A-2	R219	A-1
CN232	A-5	R223	B-1
CN235	A-1	R224	B-2
CN236	B-5	R225	A-2
		R226	B-1
FB201	A-3	R227	A-2
		R254	A-4
IC201	A-3	R255	B-4
IC202	A-2	R258	B-5
IC208	A-4	R259	B-5
IC210	A-4	R260	A-5
		R263	A-5
L201	A-4	R264	A-5
L202	A-1		
L204	A-5	X201	B-3
L205	A-5		
L206	A-3		
L207	B-3		

AE-022 BOARD (SIDE A)

CN351	C-3		
D351	C-3		
R351	C-3		
R352	B-2		
R353	A-3		
R354	A-1		
R355	A-2		
S351	C-3		
S352	B-2		
S353	B-3		
S354	A-3		
S355	A-1		
S356	A-2		

CF-074 BOARD (SIDE A)

S401 D-1
S402 D-2
S403 D-4

CF-074 BOARD (SIDE B)

CN401 B-3

D401 A-3
D402 A-3

R401 A-3

MA-379 BOARD (SIDE A)

C301 B-1

CN301 A-2
CN303 A-2
CN305 B-2
CN306 A-1

MA-379 BOARD (SIDE B)

C302 B-4
C303 A-4
C304 A-4
C305 A-4
C306 A-4
C307 A-4

IC301 A-4

L301 A-4

R301 B-4
R302 B-4
R303 A-4
R304 B-4
R305 A-4
R306 A-4

FU-139 BOARD (SIDE A)

C002 A-1
C003 A-1

CN001 A-1
CN002 A-2
CN003 A-4

FB001 A-2
FB002 A-3
FB003 A-3

LF001 A-2

Q003 A-3
Q005 A-3

R001 A-4
R005 A-3
R008 B-3
R019 A-3
R021 A-3

FU-139 BOARD (SIDE B)

C001 B-6

CN004 A-6

D002 A-7
D003 A-5
D004 A-5
D006 A-5

F001 A-6
F002 A-6
F003 A-6
F004 A-6
F005 A-6

Q001 A-7
Q001 B-7
Q002 A-7
Q004 B-6

R002 B-6
R004 A-7
R006 B-6
R009 B-6
R020 A-7

SECTION 5
ADJUSTMENTS

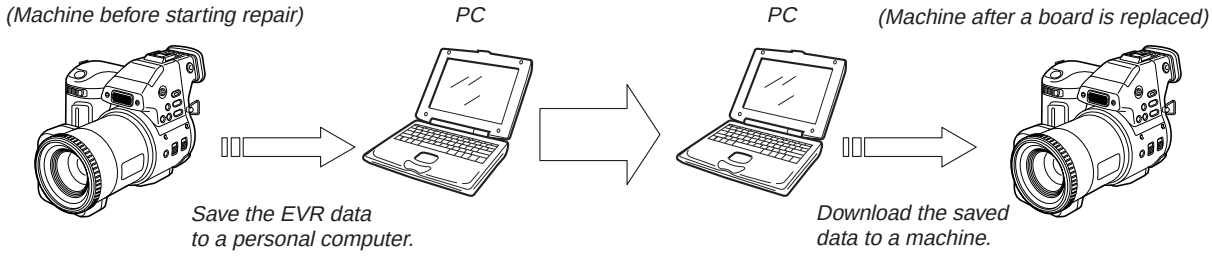
1. Before Starting Adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

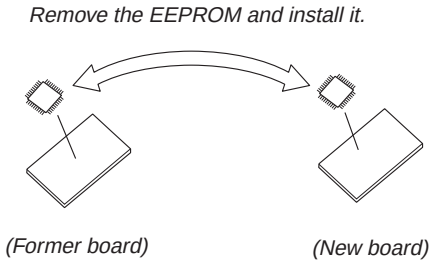
Procedure 2

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.


(Machine before starting repair)
PC
PC
(Machine after a board is replaced)
Save the EVR data to a personal computer.
Download the saved data to a machine.

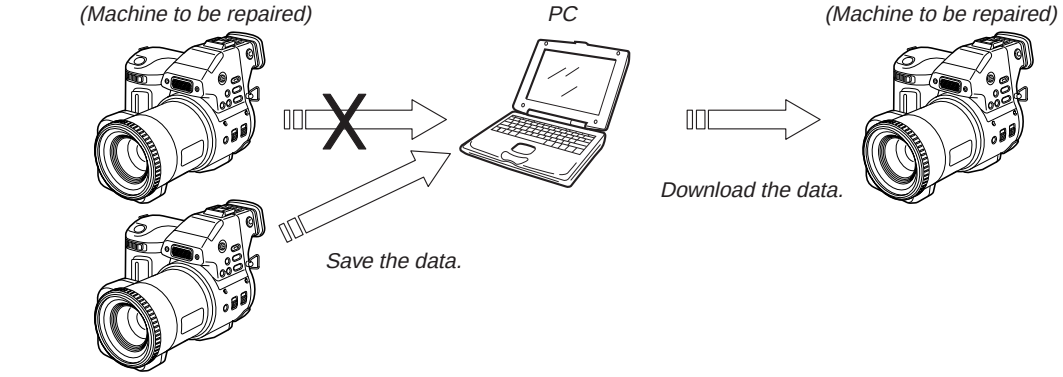
Procedure 2

Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.



Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.



After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 5-2 for the items to be checked.)

1-1. Adjusting Items When Replacing Main Parts and Boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts: Block replacement: Lens device	VAP unit	Flash unit *2	Zoom/Release unit (ZOOM block 360)	FDD unit *1	LCD block LCD901	LCD block Back light unit	EVF block LCD902	Mounted parts replacement: CD-245 board IC101 (CCD imager)	CD-245 board SE150 to 153 (PITCH/YAW sensor)	FC-72 board IC102 (S/H, AGC,A/D)	FC-72 board IC301 (CAMERA DSP)	FC-72 board IC186 (EVR)	FC-72 board IC901 (Video amp.)	PK-49 board IC802 (RGB decoder)	PK-49 board IC801 (EVR)	PK-49 board IC901 (Timing generator)	VF-143 board IC502 (RGB decoder)	VF-143 board IC503 (EVR)	VF-143 board IC603 (Timing generator)	VF-143 board ND601 (Fluorescent tube)	VF-143 board Q501, D501 (Eye sensor)	Board replacement: CD-245 board (COMPLETE)	FC-72 board (COMPLETE)	PK-49 board (COMPLETE)	VF-143 board (COMPLETE)	FC-72 board IC406 EEPROM	FC-72 board IC508 EEPROM
Initialization of B, D, E, F, 7 page data	Initialization of D page data																								●			●	
	Initialization of B, E, F, 7 page data																								●				●
Video	Video output level adj.												●	●	●										●				●
Camera	Zoom key center adj.				●																				●			●	
	HALL adj.	●												●											●				●
	Flange back adj.	●								●															●	●			●
	F No. standard data Input	●								●															●	●			●
	Mechanical shutter adj.	●								●															●	●			●
	Light level adj. and ND shutter check	●								●		●													●	●			●
	Mixed color cancel adj.	●								●		●													●	●			●
	AWB standard data input	●								●		●													●	●			●
	White balance ND filter compensation	●								●		●													●	●			●
	Auto white balance adj.	●								●		●													●	●			●
	Color reproduction adj.(ND filter OFF)	●								●		●													●	●			●
	Color reproduction adj.(ND filter ON)	●								●		●													●	●			●
	Strobe white balance Adj.			●						●		●													●	●			●
	CCD black defect compensation									●															●	●			●
	CCD white defect compensation									●															●	●			●
	Steady shot adj.		●								●														●	●			●
LCD	LCD initial data input																									●		●	
	VCO adj.																●	●								●	●	●	
	D range adj.															●	●									●	●	●	
	Bright adj.															●	●									●	●	●	
	Contrast adj.															●	●									●	●	●	
	Color adj.															●	●									●	●	●	
	V-COM level adj.															●	●									●	●	●	
	V-COM adj.						●									●	●									●	●	●	
	White balance adj.						●	●								●	●									●	●	●	
EVF	Initial data input																									●			●	
	VCO adj.																			●	●					●		●	●	
	Contrast adj.																		●	●						●		●	●	
	Bright adj.																		●	●						●		●	●	
	Backlight consumption current adj.																		●	●						●		●	●	
	White balance adj.								●										●	●		●				●		●	●	
	Eye sensor adj.																						●			●		●	●	
System control	Battery end adj.																									●			●	
	Alignment check (FDD unit)					●																								

*1: When replacing the FDD unit, reset the data of page: D, address: 6C to 6F to “00”. (Refer to “Record of Use check” of “5-2. SERVICE MODE”)

*2: When replacing the Flash unit, reset the data of page: D, address: 67 to “00”. (Refer to “Emergency Memory Address of Flash Unit” of “5-2. SERVICE MODE”)

Table. 5-1-1.

5-1. ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT

1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope • AC power adapter
• Regulated power supply • Digital voltmeter • Frequency counter

Ref. No.	Name		Parts Code	Usage
J-1	Filter for color temperature correction (C14)		J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	Pattern box PTB-450		J-6082-200-A	
J-3	Color chart for pattern box		J-6020-250-A	
J-4	Siemens star chart		J-6080-875-A	For checking the flange back
J-5	Adjustment remote commander (RM-95 upgraded).(Note 2)		J-6082-053-B	
J-6	Clear chart for pattern box		J-6080-621-A	
J-7	CPC-12 jig (22P, 0.5mm)		J-6082-436-A	For connecting the measuring instruments and the adjustment remote commander
J-8	Alignment disk	TFD2-1 (+)	8-967-990-01	For FDD dynamic inspection
	(Two disks as pair)	TFD2-2 (–)	8-967-990-11	
J-9	Cleaning disk (OR-D29WA)		8-960-009-39	For FDD head cleaning (Note 1)
	Cleaning disk		Available on market	
J-10	Personal computer with Windows95/98 installed			For checking the recorded picture
J-11	Power code		J-6082-223-A	For the battery end adjustment
J-12	Mini pattern box		J-6082-353-B	For adjusting the flange back
J-13	Camera table		J-6082-384-A	For adjusting the flange back

Note 1: Usage and operating note
One or two seconds of momentary use of cleaning disk is sufficient such that FD is accessed momentarily by system control when main power is turn on. After cleaning, insert a FD for playback. When cleaning is insufficient, use a cleaning disk again.
Caution: Avoid using a cleaning disk excessively. Head can be broken.

Note 2: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), The pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

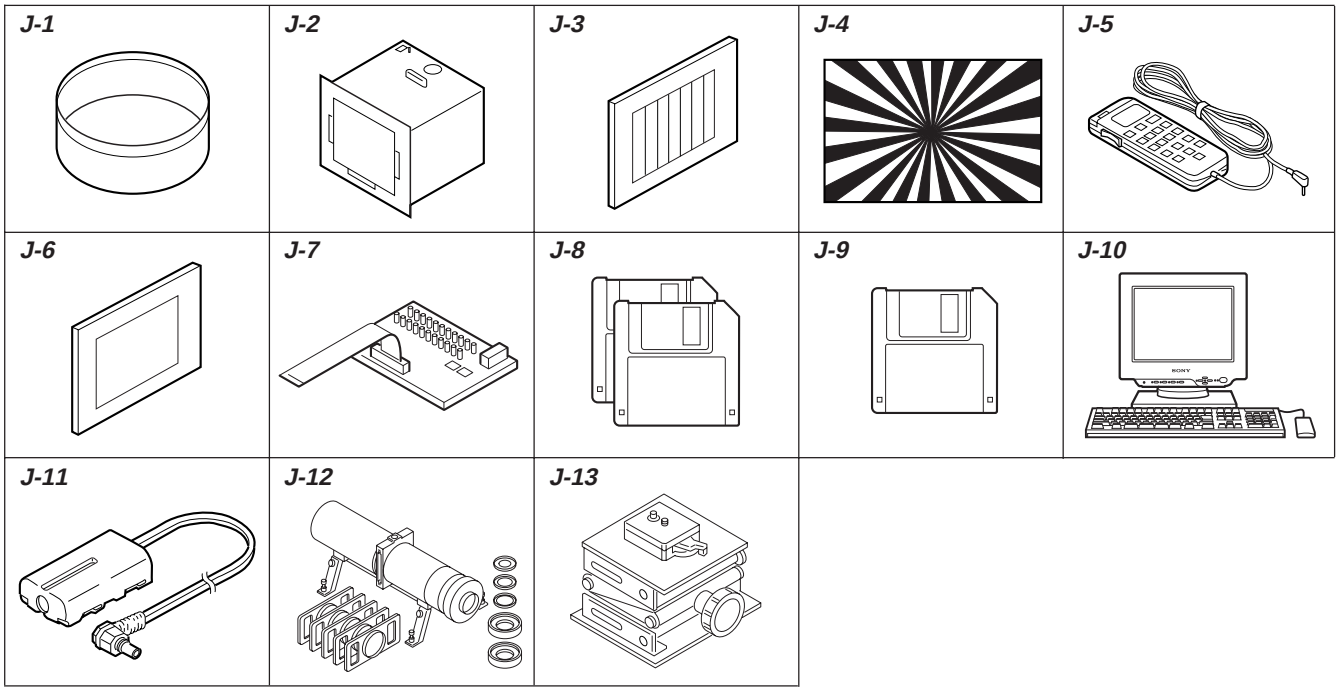


Fig. 5-1-1.

1-1-2. Preparations

Note 1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

Note 2: When performing only the adjustments, the lens block and boards need not be disassembled.

1) Connect the equipment for adjustments according to Fig. 5-1-5.
2) Connect the adjustment remote commander to the following connector or jack.
   • CN803 of FC-72 board via CPC-12 jig (J-6082-436-A)
   • LANC jack

Note 3: As disconnecting the FC-72 board CN801 means disconnecting the lithium 3V power supply (PK-49 board BT701), data such as date, time will be lost. After completing adjustments, preset these data.

Note 4: Setting the "Forced Power ON Mode (Forced STILL Mode)"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the power (STILL mode) to be turned on with PK-49 board removed. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note 5: Setting the "Forced Power ON Mode (Forced PLAY Mode)"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the power (PLAY mode) to be turned on. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note 6: Setting the "Forced Power ON Mode (Forced MOVIE Mode)"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 03, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the power (MOVIE mode) to be turned on. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note 7: Exiting the "Forced Power ON Mode"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

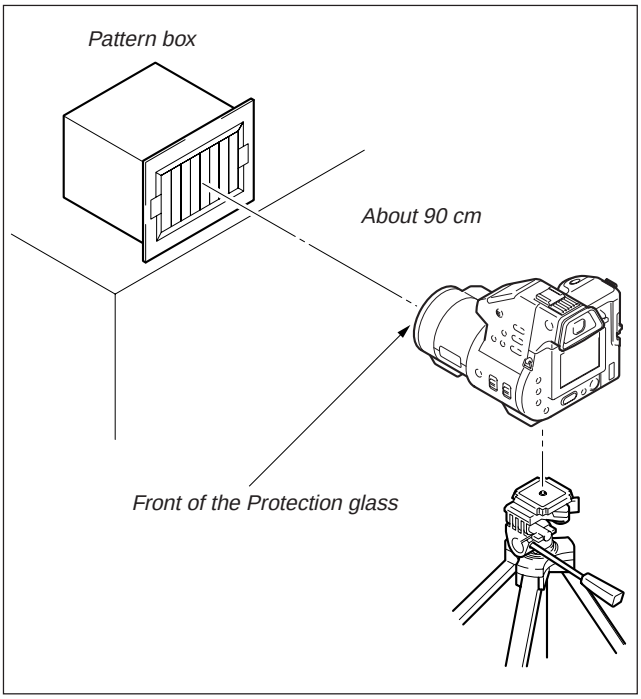


Fig. 5-1-2.

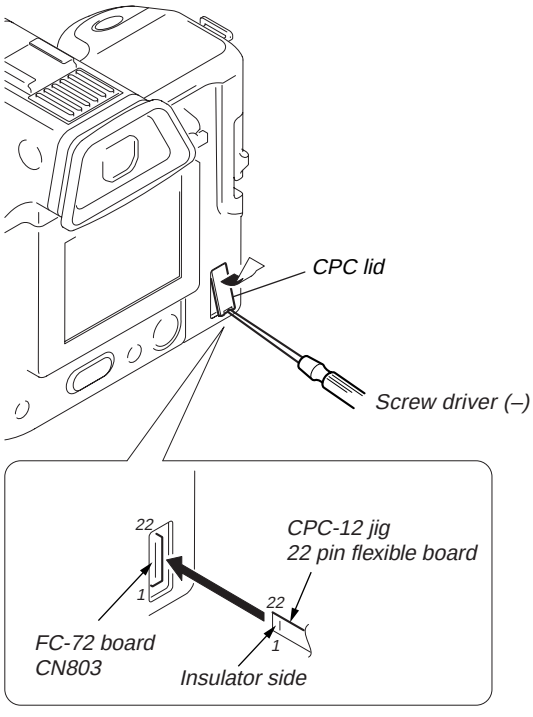


Fig. 5-1-3.

1-1-3. Discharging of the Flashlight Power Supply

The capacitor which is used as power supply of flashlight is charged with 200 V to 300 V voltage. Discharge this voltage before starting adjustments in order to protect service engineers from electric shock during adjustment.

Discharge procedure

1. Press the FLASH button (PK-49 board S705) and turn off the FLASH LED (PK-49 board D701).
2. Fabricate the discharging jig as shown in Fig. 5-1-4 locally by yourself. Connect the discharging jig to the positive (+) and negative (–) terminal of the flash voltage charge capacitor. Allow ten seconds to discharge the voltage.

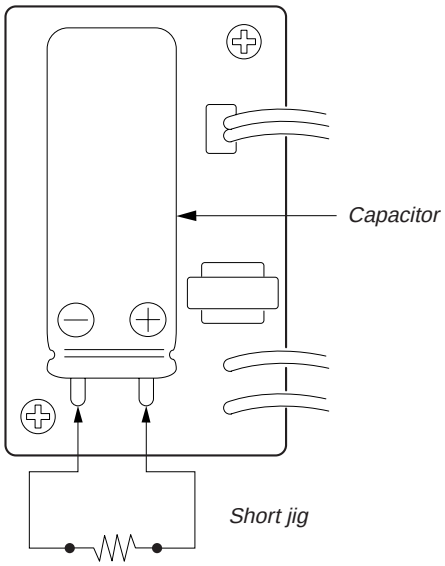
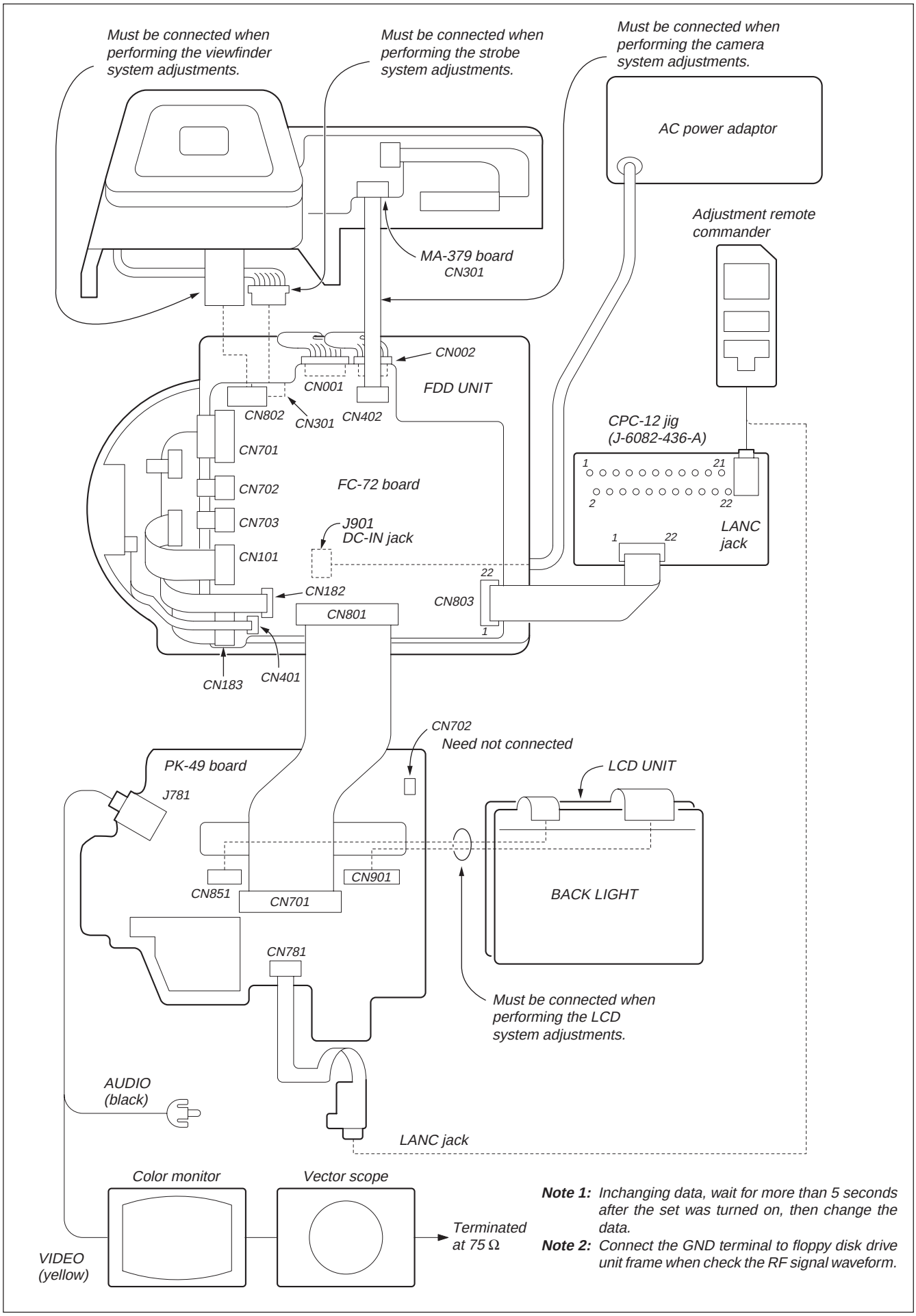


Fig. 5-1-4.



Note 1: *Inchanging data, wait for more than 5 seconds after the set was turned on, then change the data.*

Note 2: *Connect the GND terminal to floppy disk drive unit frame when check the RF signal waveform.*

Fig. 5-1-5.

1-1-4. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

1. DEMO MODE (SETUP menu) ..... OFF
2. DIGITAL ZOOM (CAMERA menu) ..... OFF
3. WHITE BALANCE (AE-022 board) ..... AUTO
4. FLASH LEVEL (CAMERA menu) ..... NORMAL
5. EXPOSURE (CAMERA menu) 0EV
6. P. EFFECT (EFFECT menu) ..... OFF
7. PROGRAM AE (AE-022 board) ..... AUTO (No mark indicated on LCD)
8. MACRO (CF-074 board) ..... OFF
9. FOCUS (CF-074 board) ..... MANUAL
10. STEADY SHOT (CF-074 board) ..... OFF
11. DISPLAY (PK-49 board) ..... OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.

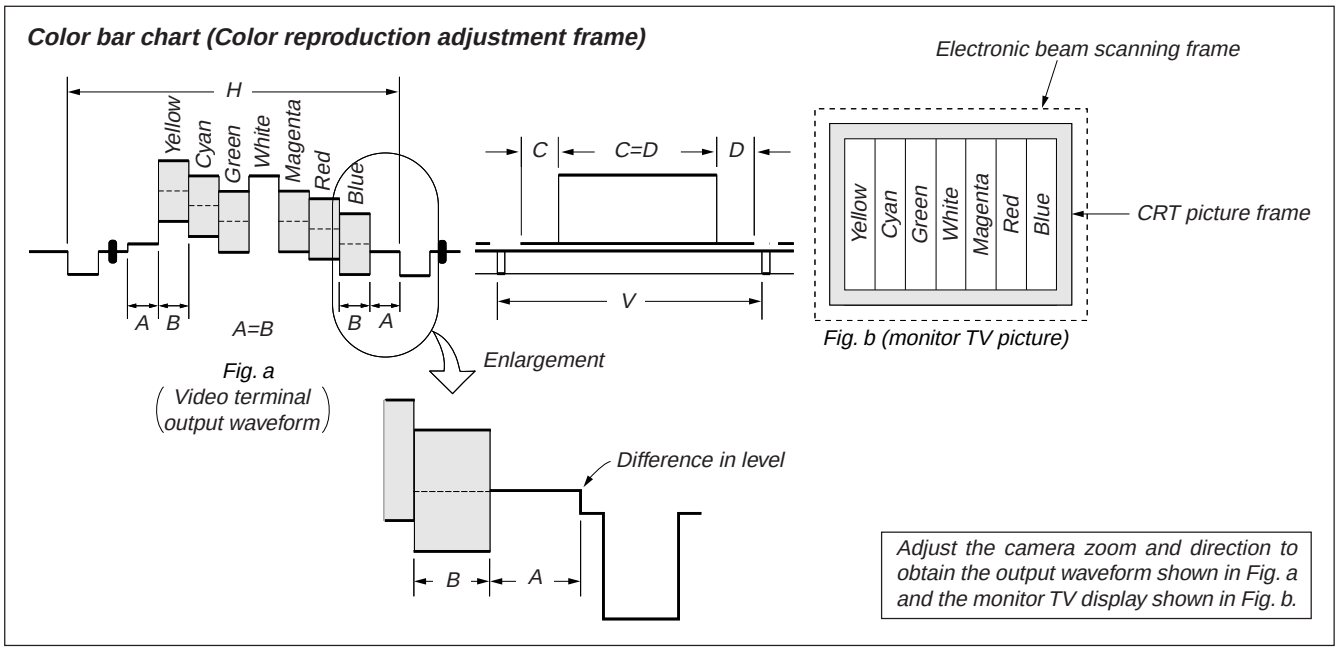


Fig. 5-1-6.

3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-6. (Standard picture frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Flange back adjustment chart
   Make the chart shown in Fig. 5-1-7 using A0 size (1189 mm × 841 mm) black and white vellum paper.

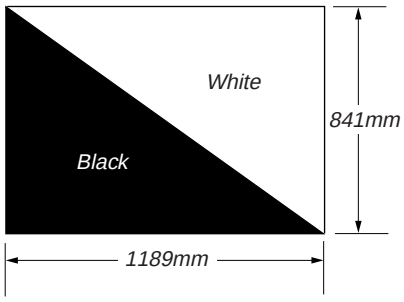


Fig. 5-1-7.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

1-2. INITIALIZATION OF B, D, E, F, 7 PAGE DATA

1-2-1. INITIALIZATION OF D PAGE DATA

1. Initializing the D Page Data

Note: If the D page data has been initialized, the following adjustments need to be performed again.
1) Modification of D page data
2) LCD system adjustments
3) Color viewfinder system adjustments
4) Battery end adjustments

Adjusting page	D
Adjusting Address	10 to EF

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 03, and set data: 06.
3) Select page: 2, address: 00, and set data: 2D.
4) Select page: 2, address: 01, set data: 2D, and press the PAUSE button of the adjustment remote commander.
5) Select page: 2, address: 02, and check that the data changes to "01".
6) Perform "Modification of D Page Data".

2. Modification of D Page Data

If the D page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camera may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of D Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjustment remote commander.

3. D Page Table

Note1: Fixed data-1: Initialized data. (Refer to "1. Initializing the D Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of D Page Data".)

Address	Initial value	Remark
00 to 0F		
10	00	Test mode
11 to 40		Fixed data-1 (Initialized data)
41		Fixed data-2 (Modified data. Copy the data built in the same model.)
42 to 61		Fixed data-1 (Initialized data)
62		Fixed data-2 (Modified data. Copy the data built in the same model.)
63		
64 to 66		Fixed data-1 (Initialized data)
67	00	Flash unit emergency
68		Fixed data-1 (Initialized data)
69		
6A		
6B		
6C	00	Recording counter
6D	00	
6E	00	
6F	00	Recording counter/MC CAM (FC-72 board IC501) emergency
70		Fixed data-2
71 to 77		Fixed data-1 (Initialized data)
78		Fixed data-2 (Modified data. Copy the data built in the same model.)
79		
7A		
7B		
7C		
7D		
7E to 7F		Fixed data-1 (Initialized data)
80		Fixed data-2 (Modified data. Copy the data built in the same model.)
81		
82		
83		
84		
85		
86		
87		
88		Fixed data-1 (Initialized data)
89	80	Zoom key center adj.
8A		Fixed data-2
8B		
8C		Fixed data-1 (Initialized data)
8D		Fixed data-2
8E to 8F		Fixed data-1 (Initialized data)
90	80	Battery end adj.
91	88	
92	AD	
93	C2	
94	CD	

Address	Initial value	Remark
95 to 97		Fixed data-1 (Initialized data)
98 to A1		Fixed data-2 (Modified data. Copy the data built in the same model.)
A2		Fixed data-1 (Initialized data)
A3		Fixed data-2
A4		Fixed data-1 (Initialized data)
A5		Fixed data-2
A6		Fixed data-1 (Initialized data)
A7		Fixed data-2
A8		Fixed data-1 (Initialized data)
A9		Fixed data-2
AA to BF		Fixed data-1 (Initialized data)
C0		Fixed data-2
C1	A0	White balance adj. (EVF)
C2	70	
C3		Fixed data-2
C4		
C5	60	VCO adj. (NTSC) (EVF)
C6	B0	Backlight consumption current adj. (EVF)
C7		Fixed data-2
C8		Fixed data-1
C9	24	Bright adj. (NTSC) (EVF)
CA	80	Contrast adj. (NTSC) (EVF)
CB	20	Bright adj. (PAL) (EVF)
CC	80	Contrast adj. (PAL) (EVF)
CD	60	VCO adj. (PAL) (EVF)
CE to CF		Fixed data-1 (Initialized data)
D0	A2/B2 (*1)	Bright adj. (LCD)
D1	66/63 (*1)	Color adj. (LCD)
D2	A8/A0(*1)	White balance adj. (LCD)
D3	7A/6A(*1)	
D4	B8/C0 (*1)	Contrast adj. (LCD)
D5	B0/54 (*1)	D range adj.(LCD)
D6	7C/8A(*1)	V-COM level adj.(LCD)
D7	6F	VCO adj. (LCD)(NTSC)
D8	74/8A (*1)	V-COM adj.(LCD)
D9	7E/73 (*1)	Fixed data (DC BL LEVEL(LCD))
DA to DB		Fixed data-1 (Initialized data)
DC	C0/B5 (*1)	Fixed data(AC BL LEVEL(LCD))
DD	6F/4F (*1)	VCO adj. (LCD)(PAL)
DE		Fixed data-2
DF		
E0 to EB		Fixed data-1 (Initialized data)
EC	22	Eye sensor adj. (EVF)
ED to EF		Fixed data-1 (Initialized data)

*1: LCD TYPE SH/ LCD TYPE CA

Table. 5-1-2.

1-2-2. Initializing the B, E, F, 7 Page Data

1. Initializing the B, E, F, 7 Page Data

Note1: If "Initializing the B, E, F, 7 Page Data" is performed, all data of the B page, E page, F page and 7 page will be initialized. (It is impossible to initialize a single page.)

Note2: If the B, E, F, 7 Page data has been initialized, "Modification of B, E, F, 7 Page Data" and following adjustments need to be performed again.
1) Video system adjustments
2) Camera system adjustments

Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	7
Adjusting Address	00 to FF
Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	B
Adjusting Address	00 to FF

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 03, and set data: 06.
3) Select page: 6, address: 00, and set data: 2D.
4) Select page: 6, address: 01, set data: 2D, and press the PAUSE button.
5) Select page: 6, address: 02, and check that the data changes to "01".
6) Perform "Modification of B, E, F, 7 Page Data".

2. Modification of B, E, F, 7 Page Data

If the B, E, F, 7 Page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camera may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of B, E, F, 7 Page data

1) Select page: 2, address: 00, and set data: 29.
2) Select page: 2, address: 01, and set data: 29, and press the PAUSE button of the adjustment remote commander.

3. F Page table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, E, F, 7 Page Data".)

Address	Initial value	Remark
00 to 0F		
10		Fixed data-1 (Initialized data)
11		Fixed data-2
12 to 13		Fixed data-1 (Initialized data)
14	12	Flange back adj.
15	A8	
16	38	
17	08	
18	17	
19	67	
1A	00	
1B	00	
1C	00	
1D	00	
1E	41	
1F	00	
20	20	
21	20	
22	20	
23	44	
24	0A	
25	00	
26	85	Light level Adj.
27		Fixed data-1 (Initialized data)
28	94	Light level Adj.
29	47	F No. standard data input
2A	41	
2B	3D	
2C	3D	
2D		Fixed data-1 (Initialized data)
2E	80	Hall adj.
2F	93	
30 to 33		Fixed data-1 (Initialized data)
34	15	Hall adj.
35	7C	
36 to 39		Fixed data-1 (Initialized data)
3A	2F	AWB standard data input
3B	37	
3C	40	
3D	D0	
3E		Fixed data-1 (Initialized data)
3F	B5	Auto white balance adj.
40	43	
41	03	Color reproduction adj.
42	E9	(ND Filter OFF)
43	63	
44	83	
45	D5	
46	FE	
47	73	
48	45	
49 to 4C		Fixed data-1 (Initialized data)
4D	27	Strobe white balance adj.
4E	77	
4F	00	White balance ND filter
50	00	compensation
51	03	Color reproduction adj.
52	E9	(ND Filter ON)
53	63	
54	83	
55	D5	
56	FE	
57	73	
58	45	
59	00	AWB standard data input
5A	14	Mechanical shutter adj.
5B		Fixed data-1 (Initialized data)
5C	63	Color reproduction adj.
5D	83	(ND Filter OFF)
5E	03	
5F	E9	
60	63	Color reproduction adj.
61	83	(ND Filter ON)
62	03	
63	E9	
64	10	Strobe white balance adj.
65	61	Video output level adj.
66	61	
67 to 68		Fixed data-1 (Initialized data)
69	00	Strobe white balance adj.
6A	E3	
6B	00	
6C	0B	Mechanical shutter adj.
6D	C2	
6E	09	
6F	42	
70	06	
71	C2	
72	05	
73	C2	
74	04	
75	C2	
76	33	
77	33	
78	33	
79	33	
7A	33	
7B	33	
7C	33	
7D	33	
7E	33	
7F	33	
80	00	Auto white balance adj.
81 to 9F		Fixed data-1 (Initialized data)
A0	00	Mixed color cancel adj.
A1	00	

Address	Initial value	Remark
A2	00	Mixed color cancel adj.
A3	00	
A4 to AB		Fixed data-1 (Initialized data)
AC	80	Steady shot adj.
AD	80	
AE to FF		Fixed data-1 (Initialized data)

Table. 5-1-3.

4. 7 Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, E, F, 7 Page Data".)

Address	Initial value	Remark
00 to 5F		Fixed data-1 (Initialized data)
60	0F	CCD black defect compensation
61	FF	
62	0F	
63	FF	
64	0F	
65	FF	
66	0F	
67	FF	
68	0F	
69	FF	
6A	0F	
6B	FF	
6C	0F	
6D	FF	
6E	0F	
6F	FF	
70	0F	
71	FF	
72	0F	
73	FF	
74	0F	
75	FF	
76	0F	
77	FF	
78	0F	
79	FF	
7A	0F	
7B	FF	
7C	0F	
7D	FF	
7E	0F	
7F	FF	
80	0F	
81	FF	
82	0F	
83	FF	
84	0F	
85	FF	
86	0F	
87	FF	
88	0F	CCD white defect compensation
89	FF	
8A	0F	
8B	FF	
8C	0F	
8D	FF	
8E	0F	
8F	FF	
90	0F	
91	FF	

Address	Initial value	Remark
92	0F	CCD white defect compensation
93	FF	
94	0F	
95	FF	
96	0F	
97	FF	
98	0F	
99	FF	
9A	0F	
9B	FF	
9C	0F	
9D	FF	
9E	0F	
9F	FF	
A0	0F	
A1	FF	
A2	0F	
A3	FF	
A4	0F	
A5	FF	
A6	0F	
A7	FF	
A8	0F	
A9	FF	
AA	0F	
AB	FF	
AC	0F	
AD	FF	
AE	0F	
AF	FF	
B0 to FF	Fixed data-1 (Initialized data)	

Table. 5-1-4.

5. E Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, E, F, 7 Page Data".)

Address	Remark
00 to 1C	Fixed data-1
1D	Fixed data-2
1E	
1F	
20	
21 to 5F	Fixed data-1
60	Fixed data-2
61 to B4	Fixed data-1
B5	Fixed data-2
B6 to B8	Fixed data-1
B9	Fixed data-2
BA to C1	Fixed data-1
C2	Fixed data-2
C3 to D6	Fixed data-1
D7	Fixed data-2
D8 to DB	Fixed data-1
DC	Fixed data-2
DD	
DE	
DF to F0	Fixed data-1
F1	Fixed data-2
F2	
F3	
F4	
F5	
F6	
F7	
F8 to FF	Fixed data-1

Table. 5-1-5.

6. B Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, E, F, 7 Page Data".)

Address	Remark
00	Fixed data-2
01 to 79	Fixed data-1
7A	Fixed data-2
7B	Fixed data-1
7C	Fixed data-2
7D	
7E to DF	Fixed data-1
E0	Fixed data-2
E1	
E2	
E3	
E4 to FF	Fixed data-1

Table. 5-1-6.

1-3. VIDEO SYSTEM ADJUSTMENTS

1. Video Output Level Adjustment (FC-72 board)

Adjust the sync level and burst level of the composite video signal output.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Video terminal of AV OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	65, 66
Specified Value	Sync level: A=286 ± 5 mV (NTSC mode) A=300 ± 5 mV (PAL mode) Burst level: B=286 ± 5 mV (NTSC mode) B=300 ± 5 mV (PAL mode)

Menu setting:

1) VIDEO OUT of SET UP menu
   ..... NTSC (NTSC mode)
   ..... PAL (PAL mode)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, and set data: 04.
3) Select page: F, address: 65, change the data and set the sync level (A) to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: F, address: 66, change the data and set the burst level (B) to the specified value.
6) Press the PAUSE button.
7) Select page: 5, address: F1, and set data: 00.
8) Select page: 0, address: 01, and set data: 00.

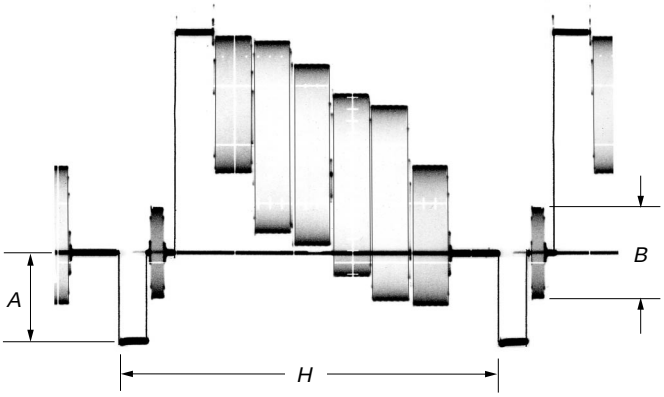


Fig. 5-1-8.

1-4. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENT" are satisfied.

Data setting during camera system adjustments:

Perform the following data setting before the camera system adjustments.

1) Select page: 0, address: 01, and set data: 01.
2) After writing down the original data of the following addresses, input the following data.

Page	Address	Data
E	43	10
E	8F	00
B	67	00

Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

After completing the camera system adjustments, release the data setting.

1) Select page: 0, address: 01, and set data: 01.
2) Select the above addresses, and input the orignal data writen down at step 2).
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

1. Zoom Key Center Adjustment

Set the A/D value center of the microprocessor to the center voltage of the zoom key.
If deviated, the zoom lens operates of itself ,even if the zoom key is the center position.

Mode	STILL
Subject	Arbitrary
Measurement Point	Display data of page: 2, address: 5C
Measuring Instrument	Adjustment remote commander
Adjustment Page	D
Adjustment Address	89

Note: Don't touch the zoom lever during adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 5C, read the data, and this data is named D_{5C}.
3) Select page: D, address: 89, set the following data.
   D_{5C} (When $6C \leqq D_{5C} \leqq 8A$)
   6C (When $5D \leqq D_{5C} < 6C$)
   8A (When $8A < D_{5C} \leqq 99$)
   Note: When $D_{5C} < 5D$ or $99 < D_{5C}$, the zoom key is defective.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 0, address: 01, and set data: 00.

2. HALL Adjustment

For detecting the position of the lens iris, adjust the hall AMP gain and offset.

Mode	STILL
Subject	All black (Cover the lens with a black cap)
Measurement Point	Display data of page 1 (Note 1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	2E, 2F, 34, 35
Specified Value	13 to 17 during IRIS OPEN 7B to 7F during IRIS CLOSE

Note 1: Displayed data of page 1 of the adjustment remote commander.

1 : 00 : XX → Display data

Note 2: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 94, and set data: 15.
3) Select page: 6, address: 95, and set data: 7D.
4) Select page: 6, address: 01, set data: 6D, and press the PAUSE button of the adjustment remote commander. (The HALL adjustment is performed and the adjustment data is stored in page: F, address: 2E, 2F, 34 and 35.)
5) Select page: 6, address: 02, and check that the data is "01".
6) Select page: 6, address: 01, set data: 00, and press the PAUSE button.

Checking method:

1) Select page: 0, address: 03, and set data: 03.
2) Select page: 6, address: 01, set data: 01, and press the PAUSE button.
3) Select page: 1, and check that the display data (Note1) during IRIS OPEN satisfies the specified value.
4) Select page: 6, address: 01, set data: 03, and press the PAUSE button.
5) Select page: 1, and check that the display data during IRIS CLOSE satisfies the specified value.

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 6, address: 94, and set data: 00.
3) Select page: 6, address: 95, and set data: 00.
4) Select page: 0, address: 03, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

3. Flange Back Adjustment (Using Minipattern Box)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Mode	STILL
Subject	Siemens star chart with ND filter for the minipattern box (Note 1)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	14 to 25

Note 1: Dark Siemens star chart.
Note 2: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Preparations before adjustments:

The minipattern box is installed as shown in the following figure.
Note: the attachment lenses are not used.

Specified voltage: The specified voltage varies according to the minipattern box, so adjust the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

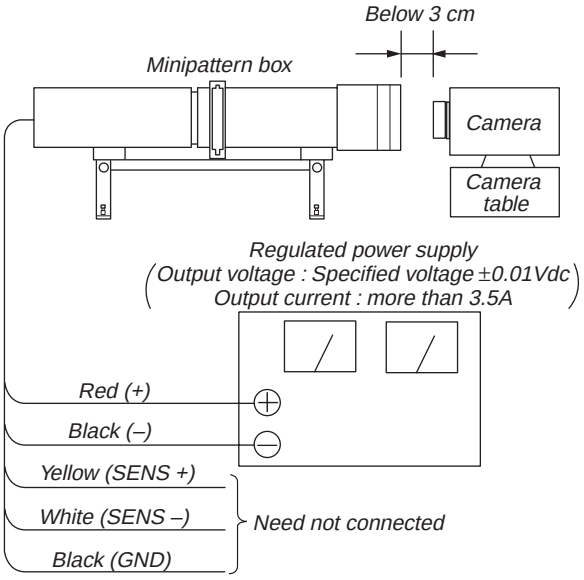


Fig. 5-1-9.

Adjusting method:

1) Install the minipattern box so that the distance between it and the front of the lens of the camera is less than 3cm.
2) Make the height of the minipattern box and the camera equal.
3) Check that the output voltage of the regulated power supply is the specified voltage.
4) Select page: 0, address: 01, and set data: 01.
5) Check that the center of the Siemens star chart and the center of the exposure screen coincide.
6) Check that the data of page: F, address: 14 to 25 is the initial value (See table below).

Address	Data	Address	Data	Address	Data
14	12	1B	00	22	20
15	A8	1C	00	23	44
16	38	1D	00	24	0A
17	08	1E	41	25	00
18	17	1F	00		
19	67	20	20		
1A	00	21	20		

7) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
8) Select page: 6, address: 01, set data: 27, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses: 14 to 25.)
9) Select page: 6, address: 02, and check that the data is changed to "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Perform "Flange Back Check".

4. Flange Back Adjustment (Using Flange Back Adjustment Chart)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

4-1. Flange Back Adjustment (1)

Mode	STILL
Subject	Flange back adjustment chart (2.0 m from the front of the lens) (Luminance: 350 ± 50 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	14 to 25

Note: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Check that the center of the chart for the flange back adjustment and the center of the exposure screen coincide.
3) Check that the data of page: F, address: 14 to 25 is the initial value (See table below).

Address	Data	Address	Data	Address	Data
14	12	1B	00	22	20
15	A8	1C	00	23	44
16	38	1D	00	24	0A
17	08	1E	41	25	00
18	17	1F	00		
19	67	20	20		
1A	00	21	20		

4) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
5) Select page: 6, address: 01, set data: 15, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses: 14 to 25.)
6) Select page: 6, address: 02, and check that the data is changed to "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Perform "Flange Back Adjustment (2)".

4-2. Flange Back Adjustment (2)

Perform this adjustment after performing "Flange Back Adjustment (1)".

Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	14 to 25

Note: Make the lens horizontal and perform this adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Set the zoom lens to the TELE end and expose a subject that is more than 500 m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500 m away should not be in the screen.)
3) Select page: 6, address: 02, and check that the data is "00".
4) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
5) Place a ND filter on the lens so that the optimum image is obtain.
6) Select page: 6, address: 01, set data: 29, and press the PAUSE button.
   (The adjustment data will be automatically input to page: F, addresses: 14 to 25.)
7) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.
2) Turn off the power and turn on again.
3) Perform "Flange Back Check".

5. Flange Back Check

Mode	STILL
Subject	Siemens star (2.0 m from the front of the lens) (Luminance : approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	The lens is focused.

Switch setting:

1) FOCUS ..... AUTO

Checking method:

1) Place the Siemens star 2.0m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
3) Shoot the Siemens star with the zoom TELE end.
4) Select page: 5, address: F1, and set data: FF.
5) Observe the TV monitor and check that the lens is focused.
6) Select page: 6, address: 2C, and set data: 01.
7) Shoot the Siemens star with the zoom WIDE end.
8) Observe the TV monitor and check that the lens is focused.

Processing after Completing Adjustments:

1) Select page: 6, address: 2C, and set data: 00.
2) Select page: 5, address: F1, and set data: 00.

6. F No. Standard Data Input

Compensate the unevenness of the iris meter sensitivity.

Mode	STILL
Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	29 to 2C

Note 1: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Note 2: After the power is turned on, this adjustment can be done only once.

Adjusting method:

1) Shoot the clear chart with the zoom WIDE end.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 6, address: 01, set data: BB, and press the PAUSE button of the adjustment remote commander.
   (The F No. standard data input is performed and the adjustment data is stored in page: F, address: 29 to 2C.)
4) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.

7. Mechanical Shutter Adjustment

Adjust the period which the mechanical shutter is closed, and compensate the exposure.

Mode	STILL
Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	5A, 6C to 7F

Note: 1 If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Note: 2 Install the clear chart at a distance of about 10 cm from the front of the lens. (It is recommended.)

Adjusting method:

1) Shoot the clear chart with the zoom WIDE end.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 6, address: 01, set data: AD, and press the PAUSE button of the adjustment remote commander.
   (The mechanical shutter adjustment is performed and the adjustment data is stored in page: F, address: 5A, 6C to 7F.)
4) Select page: 6, address: 02, and check that the data changes to "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.

8. Picture Frame Setting

Mode	STILL
Subject	Color bar chart (Color reproduction adjustment frame) About 90 cm from the front of the protection glass
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Note 1: Display data of page 1 of the adjustment remote commander.

1 : XX : XX
- XX → XL or YL data
- XX → XH or YH data

Setting method:

1) Select page: 5, address: F1, and set data: FF.
2) Adjust the zoom and the camera direction, and set the picture frame to the specified position.
3) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color reproduction adjustment frame”.
4) Select page: 0, address: 03, and set data: 18.
5) Select page: 1, and note down the XH data and XL data. (Note1)
6) Select page: 0, address: 03, and set data: 22.
7) Select page: 1, and note down the YH data and YL data. (Note1)
8) Select page: 5, address: F1, and set data: 00.

How to reset the zoom and focus when they deviated:

If the zoom and focus deviated due to some reason, reset them in the following method.

1) Select page: 6, address: 90, and set data: XL. (Note 2)
2) Select page: 6, address: 91, and set data: XH. (Note 2)
3) Select page: 6, address: 92, and set data: YL. (Note 3)
4) Select page: 6, address: 93, and set data: YH. (Note 3)
5) Select page: 6, address: 01, set data: 79, and press the PAUSE button and wait for 1 second.
6) Select page: 6, address: 2C, and set data: 01.
7) Select page: 6, address: 01, set data: 00, and press the PAUSE button.

Note 2: The data noted down at step 5) .of the “Setting method”.
Note 3: The data noted down at step 7) .of the “Setting method”.

Check on an oscilloscope

1. Horizontal period

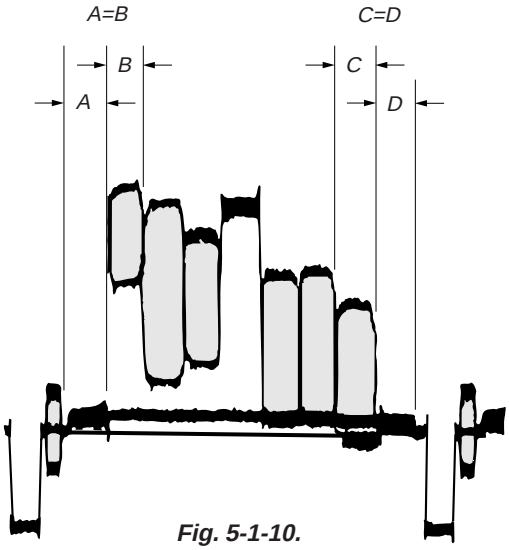


Fig. 5-1-10.

2. Vertical period

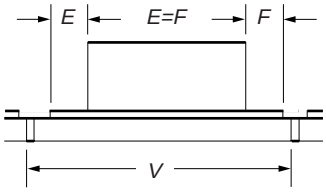


Fig. 5-1-11.

Check on the monitor TV (Underscanned mode)

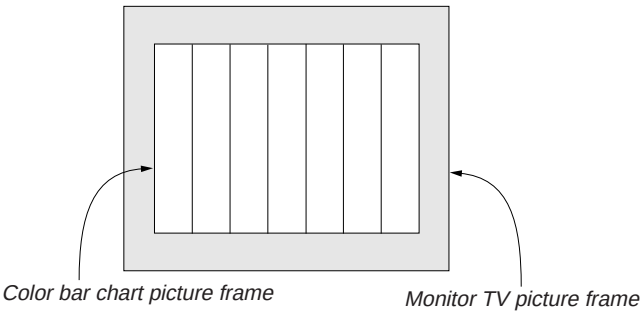


Fig. 5-1-12.

9. Light Level Adjustment and ND Shutter Check

Adjust the standard LV value.

Mode	STILL
Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Display data of page 1 (Note 2)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	26, 28
Specified Value	AE level 1: 0FE0 to 1020 AE level 2: Bellow 1100

Note 1: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Note 2: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
Display data

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 01, set data: 0D, and press the PAUSE button of the adjustment remote commander.
   (The light level adjustment is performed and the adjustment data is stored in page: F, address: 26, 28.)
3) Select page: 6, address: 02, and check that the data is "01".

• AE level 1 Check

4) Select page: 0, address: 03, and set data: 06.
5) Select page: 1, and check that the display data (Note2) satisfies the AE level 1 specified value.

• AE level 2 Check

6) Select page: E, address: 41, set data: 6B, and press the PAUSE button.
7) Select page: 6, address: 1C, and set data: 03.
8) Select page: 1, and check that the display data (Note2) satisfies the AE level 2 specified value.

Processing after Completing Adjustments:

1) Select page: E, address: 41, set data: 6A, and press the PAUSE button.
2) Select page: 6, address: 1C, and set data: 00.
3) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
4) Select page: 0, address: 03, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

10. Mixed Color Cancel Adjustment

Perform the mixed color cancel adjustment using the each data of the color bars.

Mode	STILL
Subject	Color bar chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	A0 to A3

Note 1: This adjustment should be carried out upon completion of "Light Level Adjustment and ND Shutter Check".

Note 2: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Check that the picture frame is set to the specified position. (Refer to "8. Picture Frame Setting".)
3) Select page: 6, address: 01, set data: D7, and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 01, set data: D5, and press the PAUSE button.
   (The mixed color cancel adjustment is performed and the adjustment data is stored in page: F, address: A0 to A3.)
   Note: Observe the TV monitor and check that a vertical line is indicated inside each color zone.
5) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, and set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.

11. Auto White Balance Standard Data Input

Adjust the white balance standard data at 3200 K.

Mode	STILL
Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	3A to 3D, 59

Note 1: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Note 2: After the power is turned on, this adjustment can be done only once.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 01, set data: 11, and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 01, set data: 0B, and press the PAUSE button.
   (The auto white balance standard data input is performed and the adjustment data is stored in page: F, address: 3A to 3D, 59)
4) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, and set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.

12. White Balance ND Filter Compensation

Compensate the white balance deviation when ND filter is ON.

Mode	STILL
Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	4F, 50

Note 1: This adjustment should be carried out upon completion of "Auto White Balance Standard Data Input".

Note 2: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Note 3: After the power is turned on, this adjustment can be done only once.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 27, after noting down the data, set data: 80, and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 1C, set data: 03, and wait for 1 second.
4) Select page: 6, address: 01, set data: 11, and press the PAUSE button of the adjustment remote commander.
5) Select page: 6, address: 01, set data: 09, and press the PAUSE button.
   (The white balance ND filter compensation is performed and the adjustment data is stored in page: F, address: 4F, 50.)
6) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 1C, set data: 00.
2) Select page: 6, address: 01, and set data: 00, and press the PAUSE button.
3) Select page: F, address: 27, set the data noted down at step 2) of "Adjusting method", and press the PAUSE button.
4) Select page: 0, address: 01, and set data: 00.

13. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Mode	STILL
Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Display data of page 1 (Note 2)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	3F, 40, 80
Specified Value	R ratio: 2760 to 28A0 B ratio: 5DE0 to 5F20

Note 1: This adjustment should be carried out upon completion of "Auto White Balance Standard Data Input" and "White Balance ND Filter compensation".
Note 2: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.
Note 3: After the power is turned on, this adjustment can be done only once.
Note 4: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
└► Display data

Adjusting method:

1) Place the C14 filter for color temperature correction on the lens.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: F, address: 49 to 4C, and note down the data of each address.
4) Input the following data to page: F, addresses: 49 to 4C.

Address	49	4A	4B	4C
Data	28	00	5E	80

Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

5) Select page: 6, address: 01, set data: A7, and press the PAUSE button.
6) Select page: 6, address: 01, set data: A5, and press the PAUSE button. (The auto white balance adjustment is performed and the adjustment data is stored in page: F, address: 3F, 40 and 80.)
7) Select page: 6, address: 02, and check that the data is "01".
8) Select page: 6, address: 01, set data: 3F, and press the PAUSE button.
9) Select page: 0, address: 03, and set data: 04.
10) Select page: 1, and check that the display data (Note 4) satisfies the R ratio specified value.
11) Select page: 0, address: 03, and set data: 05.
12) Select page: 1, and check that the display data (Note 4) satisfies the B ratio specified value.
13) Select page: F, address: 49 to 4C, and input the data noted down at step 3).

Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Processing after Completing Adjustments:

1) Select page: 0, address: 03, and set data: 00.
2) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00

14. Color Reproduction Adjustment (ND Filter OFF)

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Mode	STILL
Subject	Color bar chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	41 to 48, 5C to 5F

Note 1: This adjustment should be carried out upon completion of "Auto White Balance Standard Data Input" and "Auto White Balance Adjustment".
Note 2: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.
Note 3: After the power is turned on, this adjustment can be done only once.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Check that the picture frame is set to the specified position. (Refer to "8. Picture Frame Setting".)
3) Select page: B, address: 67, after noting down the data, set data: 00, and press the PAUSE button.
4) Select page: 6, address: 01, set data: AB, and press the PAUSE button.
5) Select page: 6, address: 12, set data: 80, and wait for 1 seconds.
6) Select page: 6, address: 12, set data: 00, and wait for 2 seconds.
7) Select page: 6, address: 01, set data: A9, and press the PAUSE button.
   (The color reproduction adjustment is performed and the adjustment data is stored in page: F, address: 41 to 48, 5C to 5F.)

   Note: Observe the TV monitor and check that a sign "□" is indicated inside each color zone.
8) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: B, address: 67, set the data noted down at step 3), and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00

15. Color Reproduction Adjustment (ND Filter ON)

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Mode	STILL
Subject	Color bar chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	51 to 58, 60 to 63

Note 1: This adjustment should be carried out upon completion of "Auto White Balance Standard Data Input", "Auto White Balance Adjustment" and "White Balance ND Filter Compensation".

Note 2: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 27, after noting down the data, set data: 80, and press the PAUSE button of the adjustment remote commander.
3) Select page: B, address: 67, after noting down the data, set data: 00, and press the PAUSE button.
4) Check that the picture frame is set to the specified position. (Refer to "8. Picture Frame Setting".)
5) Select page: 6, address: 1C, set data: 03, wait for 1 second.
6) Select page: 6, address: 01, set data: C3, and press the PAUSE button
7) Select page: 6, address: 12, set data: 80, and wait for 1 seconds.
8) Select page: 6, address: 12, set data: 00, and wait for 2 seconds.
9) Select page: 6, address: 01, set data: C1, and press the PAUSE button.
   (The color reproduction adjustment is performed and the adjustment data is stored in page: F, address: 51 to 58, 60 to 63.)
   Note: Observe the TV monitor and check that a sign "□" is indicated inside each color zone.
10) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 6, address: 1C, and set data: 00
3) Select page: F, address: 27, set the data noted down at step 2) of "Adjusting method", and press the PAUSE button.
4) Select page: B, address: 67, set the data noted down at step 3) of "Adjusting method", and press the PAUSE button.
5) Select page: 0, address: 01, and set data: 00

16. Color Reproduction Check

Mode	STILL
Subject	Color bar chart (Color reproduction adjustment frame)
Measurement Point	Video output terminal
Measuring Instrument	NTSC vectorscope (NTSC mode) PAL vectorscope (PAL mode)
Specified Value	Each center of all color luminance points should settle within each color reproduction frame.

Menu setting:

1) VIDEO OUT of SET UP menu
   ..... NTSC (NTSC mode)
   ..... PAL (PAL mode)

Checking method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, and set data: FF.
3) Check that the picture frame is set to the specified position. (Refer to "8. Picture Frame Setting".)
4) Select page: B, address: 67, after noting down the data, set data: 00, and press the PAUSE button of the adjustment remote commander.
5) Select page: 6, address: 10, and set data: 01.
6) Select page: E, address: 52, after noting down the data, set data: 0A, and press the PAUSE button.

• ND filter OFF color reproduction check

7) Select page: 6, address: 01, set data: 0F, and press the PAUSE button.
8) Select page: 6, address: 12, set data: 80, and wait for 1 seconds.
9) Select page: 6, address: 12, set data: 00, and wait for 2 seconds.
10) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
11) Check that each center of all color luminance points is settled in each color reproduction frame.

• ND filter ON color reproduction check

12) Select page: F, address: 27, after noting down the data, set data: 80, and press the PAUSE button.
13) Select page: 6, address: 1C, set data: 03, and wait for 1 second.
14) Select page: 6, address: 12, set data: 80, and wait for 1 seconds.
15) Select page: 6, address: 12, set data: 00, and wait for 2 seconds.
16) Check that each center of all color luminance points is settled in each color reproduction frame.
17) Select page: F, address: 27, after noted down at step 12), and press the PAUSE button.

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 6, address: 1C, and set data: 00.
3) Select page: 6, address: 10, and set data: 00.
4) Select page: E, address: 52, set the data noted down at step 6) of "Checking method", and press the PAUSE button.
5) Select page: B, address: 67, set the data noted down at step 4) of "Checking method", and press the PAUSE button.
6) Select page: 5, address: F1, and set data: 00.
7) Select page: 0, address: 01, and set data: 00.

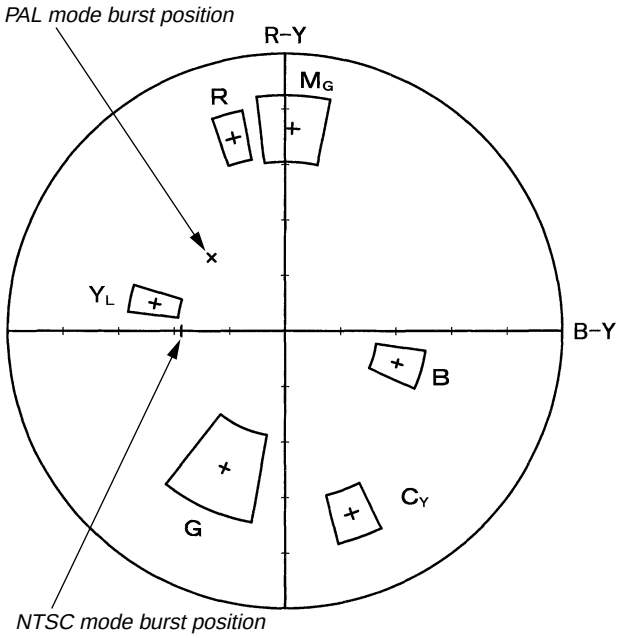


Fig. 5-1-13.

17. White Balance Check

Mode	STILL	
Subject	Clear chart (Color reproduction adjustment frame)	
Measurement Point	Display data of page 1 (Note 2)	Video output terminal
Measuring Instrument	Adjustment remote commander	Vectorscope
Specified Value	R ratio: 3E00 to 4200 B ratio: 3E00 to 4200	Fig. 5-1-14. A to B

Note 1: Refer to "8. Picture Frame setting" for XH, XL, YH and YL.
Note 2: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
Display data

Checking method:

1) Check that the lens is not covered with any filter.
   Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 90, and set data: XL. (Note1)
3) Select page: 6, address: 91, and set data: XH. (Note1)
4) Select page: 6, address: 92, and set data: YL. (Note1)
5) Select page: 6, address: 93, and set data: YH. (Note1)
6) Select page: 6, address: 6C, and set data: 01.
7) Select page: 6, address: 01, set data: 79, and press the PAUSE button, and wait for 1 second.
8) Select page: 6, address: 2C, and set data: 01.

• INDOOR (ND filter OFF) data check

9) Select page: E, address: 52, after noting down the data, set data: 0E, and press the PAUSE button.
10) Select page: 6, address: 01, set data: 0F, and press the PAUSE button.
11) Select page: 0, address: 03, and set data: 04.
12) Select page: 1, and check that the display data (Note2) satisfies the R ratio specified value.
13) Select page: 0, address: 03, and set data: 05.
14) Select page: 1, and check that the display data (Note2) satisfies the B ratio specified value.

• INDOOR (ND filter ON) data check

15) Select page: F, address: 27, after noting down the data, set data: 80, and press the PAUSE button.
16) Select page: 6, address: 1C, set data: 03, and wait for 1 second.
17) Select page: 0, address: 03, and set data: 04.
18) Select page: 1, and check that the display data (Note2) satisfies the R ratio specified value.
19) Select page: 0, address: 03, and set data: 05.
20) Select page: 1, and check that the display data (Note2) satisfies the B ratio specified value.
21) Select page: F, address: 27, set the data noted down at step 14), and press the PAUSE button.
22) Select page: 6, address: 1C, set data: 00, and wait for 1 second.

• INDOOR luminance point check

23) Select page: 0, address: 03, and set data: 00.
24) Check that the center of the white luminance point is within the circle shown Fig. 5-1-14. (A).

• OUTDOOR luminance point check

25) Place the C14 filter on the lens.
26) Select page: 0, address: 01, and set data: 01.
27) Select page: E, address: 4B, after noting down the data, set data: 20, and press the PAUSE button.
28) Select page: 6, address: 01, set data: 3F, and press the PAUSE button.
29) Check that the center of the white luminance point settles in the circle shown Fig. 5-1-14. (B).

Processing after Completing Adjustments:

1) Select page: E, address: 4B, set the data noted down at step 27), and press the PAUSE button.
2) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
3) Select page: 6, address: 6C, and set data: 00.
4) Select page: E, address: 52, set the data noted down at step 9) of "Checking method", and press the PAUSE button.
5) Select page: 0, address: 01, and set data: 00.

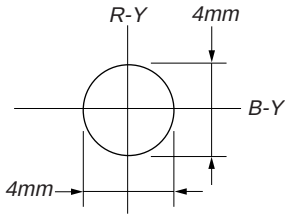


Fig. 5-1-14 (A).

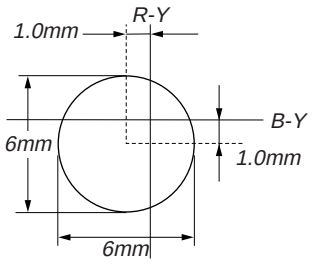


Fig. 5-1-14 (B).

18. Strobe White Balance Adjustment

Adjust the white balance when the strobe light flashes.

Mode	STILL
Subject	A plate which reflection rate is 18 % (1.0m from the front of the lens)
Adjustment Page	F
Adjustment Address	4D, 4E, 64, 69, 6A, 6B

Note 1: Perform this adjustment in the dark room or use a dark box.
Note 2: Any light other than the strobe light should not light up the plate.
Note 3: This adjustment should be carried out upon completion of "HALL Adjustment", "Flange Back Adjustment", "Light Level Adjustment" and "Auto White Balance Adjustment".
Note 4: After the power is turned on, this adjustment can be done only once.

Switch setting:

1) FLASH ..... ON
2) FLASH emitter ..... OPEN

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 90, and set data: 00.
3) Select page: 6, address: 91, and set data: 00.
4) Select page: 6, address: 92, and set data: 00.
5) Select page: 6, address: 93, and set data: C0.
6) Select page: 6, address: 6C, and set data: 01.
7) Select page: 6, address: 2C, and set data: 01.
8) Select page: 6, address: 01, set data: 79, and press the PAUSE button.
9) Select page: 6, address: 01, set data: 67, and press the PAUSE button. (Check the flashing of the strobe light.)
10) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
11) Select page: 6, address: 01, set data: 79, and press the PAUSE button.
12) Select page: 6, address: 01, set data: 67, and press the PAUSE button. (Check the flashing of the strobe light.)
13) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
14) Select page: 6, address: 01, set data: 79, and press the PAUSE button.
15) Select page: 6, address: 01, set data: B9, and press the PAUSE button.
16) Check the flashing of the strobe light.
(The strobe white balance adjustment is performed and the adjustment data is stored in page: F, address: 4D, 4E, 64, 69, 6A and 6B.)
17) Select page: 6, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 6, address: 2C, and set data: 00.
2) Select page: 6, address: 93, and set data: 00.
3) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
4) Select page: 6, address: 6C, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

19. Strobe Light Level and White Balance Check

Check the light level regulation and the white balance when the strobe light flashes.

Mode	STILL
Subject	A plate which reflection rate is 18% (1.0 m from the front of the lens) (Note 1)
Measurement Point	Display data of page: 1
Measuring Instrument	Adjustment remote commander
Specified value	Y level data: 60 to 94 (Note 4) R-Y data: FA to FF or 00 to 06 (Note 5) B-Y data: FA to FF or 00 to 06 (Note 5)

Note 1: Perform this adjustment in the dark room or use a dark box.
Note 2: Any light other than the strobe light should not light up the plate.
Note 3: This adjustment should be carried out upon completion of "HALL Adjustment", "Flange Back Adjustment", "Light Level Adjustment", "Auto White Balance Adjustment" and "Strobe White Balance Adjustment".
Note 4: Display data of page: F, address: 64 of the adjustment remote commander.

F : XX : 64
→ Y level data

Note 5: Display data of page 1 of the adjustment remote commander.

1 : XX : XX
→ B-Y data
→ R-Y data

Switch setting:

1) FLASH ..... ON
2) FLASH emitter ..... OPEN

Checking method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 90, and set data: 00.
3) Select page: 6, address: 91, and set data: 00.
4) Select page: 6, address: 92, and set data: 00.
5) Select page: 6, address: 93, and set data: C0.
6) Select page: 6, address: 6C, and set data: 01.
7) Select page: 6, address: 2C, and set data: 01.
8) Select page: 6, address: 01, set data: 79, and press the PAUSE button.
9) Select page: 6, address: 01, set data: 67, and press the PAUSE button.
10) Check the flashing of the strobe light.
11) Select page: F, address: 64, and check that the Y level data satisfies the specified value. (Note4)
12) Select page: 0, address: 03, and set data: 02.
13) Select page: 1, and check that the R-Y data and B-Y data satisfy the specified value respectively.(Note5)

Processing after Completing Adjustments:

1) Select page: 0, address: 03, and set data: 00.
2) Select page: 6, address: 2C, and set data: 00.
3) Select page: 6, address: 93, and set data: 00.
4) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
5) Select page: 6, address: 6C, and set data: 00.
6) Select page: 0, address: 01, and set data: 00.

20. CCD Black Defect Compensation

Mode	STILL
Subject	Clear chart (25 cm from the front of the lens) (Note 1)
Adjustment Page	7
Adjustment Address	60 to 87

Note 1: Check that there are no dust, no dirt and no reflection on the clear chart.
Note 2: Any subject other than the clear chart should not be in the screen.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: DF, after noting down the data, set data: 4C, and press the PAUSE button.
3) Select page: 6, address: 2C, and set data: 01.
4) Select page: 6, address: 90, and set data: 00.
5) Select page: 6, address: 91, and set data: 03.
6) Select page: 6, address: 92, and set data: 00.
7) Select page: 6, address: 93, and set data: 00.
8) Select page: 6, address: 6C, and set data: 01.
9) Select page: 6, address: 01, set data: 79, and press the PAUSE button.
10) Select page: 6, address: 30, set data: 01, and press the PAUSE button and wait for 4 seconds.
11) Select page: 6, address: 01, set data: 8D, and press the PAUSE button.
    (The CCD black defect compensation is performed and the adjustment data is stored in page: 7, address: 60 to 87.)
12) Select page: 6, address: 02, and check that the data changes to "01".
13) Select page: 6, address: 55, and check the data.
    00 to 0A : Normal
    0B to FF : Defective
14) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
15) Select page: F, address: DF, set data: 5A, and press the PAUSE button.
16) Select page: 6, address: 01, set data: 89, and press the PAUSE button. (Black defect check)
17) Select page: 6, address: 02, and check that the data changes to "01".
18) Select page: 6, address: 55, and check the data.
    00 : Normal
    01 to FF : Defective

Processing after Completing Adjustments:

1) Select page: F, address: DF, set the data noted down at step 2), and press the PAUSE button.
2) Select page: 6, address: 01, and set data: 00, and press the PAUSE button.
3) Select page: 6, address: 2C, and set data: 00.
4) Select page: 6, address: 30, and set data: 00.
5) Select page: 6, address: 91, and set data: 00.
6) Select page: 6, address: 6C, and set data: 00.
7) Select page: 0, address: 01, and set data: 00.

21. CCD White Defect Compensation

Mode	STILL
Subject	Clear chart (25 cm from the front of the lens) (Note 1)
Adjustment Page	7
Adjustment Address	88 to AF

Note 1: Check that there are no dust, no dirt and no reflection on the clear chart.
Note 2: Any subject other than the clear chart should not be in the screen.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: DE, after noting down the data, set data: 1E, and press the PAUSE button.
3) Select page: F, address: E3, after noting down the data, set data: 08, and press the PAUSE button.
4) Select page: 6, address: 01, set data: 8B, and press the PAUSE button.
   (The CCD white defect compensation is performed and the adjustment data is stored in page: 7, address: 88 to AF.)
5) Select page: 6, address: 02, and check that the data changes to "01".
6) Select page: 6, address: 55, and check the data.
   00 to 7F : Normal
   80 to FF : Defective
7) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
8) Select page: F, address: DE, set data: 0F, and press the PAUSE button.
9) Select page: F, address: E3, set data: A0, and press the PAUSE button.
10) Select page: 6, address: 01, set data: 87, and press the PAUSE button. (White defect check)
11) Select page: 6, address: 02, and check that the data changes to "01".
12) Select page: 6, address: 55, and check the data.
    00 : Normal
    01 to FF : Defective

Processing after Completing Adjustments:

1) Select page: F, address: DE, set the data noted down at step 2), and press the PAUSE button.
2) Select page: F, address: E3, set the data noted down at step 3), and press the PAUSE button.
3) Select page: 6, address: 01, and set data: 00, and press the PAUSE button.
4) Select page: 0, address: 01, and set data: 00.

22. Steady shot adjustment

- Perform the steady shot adjustment only when replacing the angular velocity sensor. When the microprocessor, circuit, etc. malfunctions, do not perform this adjustment but check operations only.
- Record the sensitivity label of the angular velocity sensor (repair part), including to which side of the board it was attached to, etc. If it has been attached incorrectly, the image will move up and down or to the left and right during steady shot operation. Be sure to take note of this.

Precautions on the Parts Replacement

There are two types of repair parts.

Type A ENC03JA
Type B ENC03JB

Replace the broken sensor with a same type sensor. If replace with other type parts, the image will vibrate up and down or left and right during hand-shake correction operations. After replacing, re-adjust according to the adjusting method after replacement.

Precautions on Angular Velocity Sensor

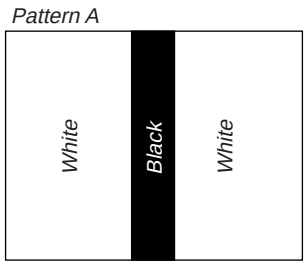
The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of the oscillator will be disrupted and operations will not be performed properly.

Switch setting:

1) Steady Shot (FRONT SW block) ..... ON

22-1. Steady Shot Adjustment (1)

Subject	Pattern A (1.5m from the front of the protection glass)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope (H period)
Adjustment Page	F
Adjustment Address	AD



A4 size (297mm × 210mm)

Fig. 5-1-15.

Adjusting method:

1) Expose pattern A with the zoom TELE end.
2) Adjust the inclination of the camera so that the vertical black line comes to the center of the screen.
3) Select page: 0, address: 01, and set data: 01.
4) Select page: B, address: FF, set data: 08, and press the pause button of the adjustment remote commander.
5) Turn off the HOLD switch of the adjustment remote commander.
6) Adjust to the falling edge of the waveform with vertical scale on the oscilloscope. (Oscilloscope is H period).
7) Turn on the HOLD switch.
8) Select page: B, address: FF, set data: 09, and press the pause button of the adjustment remote commander.
   At this time, measure the moving amount t1 (μsec) of the falling edge of the waveform.
9) Turn off the HOLD switch.
10) Obtain D_{AD}' using the following equation (decimal calculation).
    $D_{AD}' = (4.0/t1) \times [1.01/(\text{Yaw sensor sensitivity})] \times 94$
    Note: The Yaw sensor sensitivity (SE151) of CD-245 board) is labeled only on the repair part.
11) Raise D_{AD}' to a whole number, convert it to a hexadecimal digit and take this as D_{AD}. (Refer to Table 5-2-1. "Hexadecimal - Decimal conversion table" of "5-2. SERVICE MODE".)
12) Turn on the HOLD switch.
13) Select page: F, address: AD, set data: D_{AD}, and press the pause button of the adjustment remote commander.
14) Select page: B, address: FF, set data: 08, and press the pause button.

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.
2) Turn off the HOLD switch.
3) Check that the steady shot operation is performed normally.

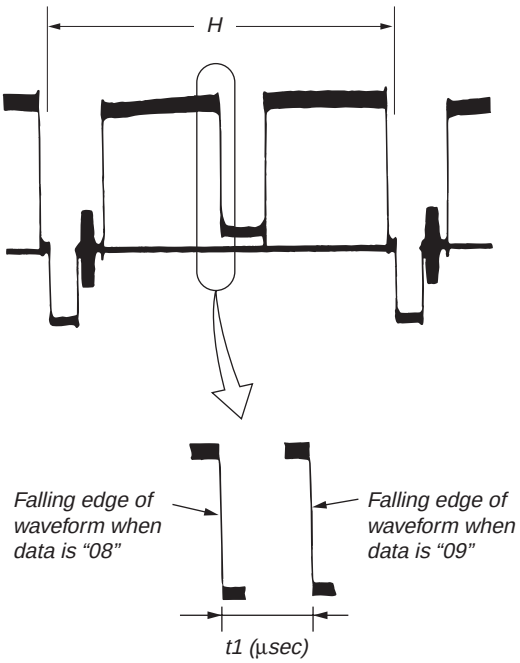


Fig. 5-1-16.

22-2. Steady Shot Adjustment (2)

Subject	Pattern B (1.5m from the front of the protection glass)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope (V period)
Adjustment Page	F
Adjustment Address	AC

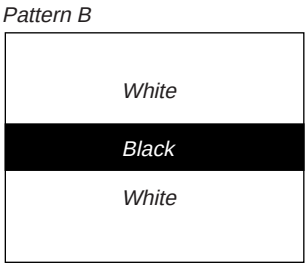


Fig. 5-1-17.

Adjusting method:

1) Expose pattern B with the zoom TELE end.
2) Adjust the inclination of the camera so that the horizontal black line comes to the center of the screen.
3) Select page: 0, address: 01, and set data: 01.
4) Select page: B, address: FE, set data: 08, and press the pause button of the adjustment remote commander.
5) Turn off the HOLD switch of the adjustment remote commander.
6) Adjust to the falling edge of the waveform with vertical scale on the oscilloscope. (Oscilloscope is V period).
7) Turn on the HOLD switch.
8) Select page: B, address: FE, set data: 09, and press the pause button of the adjustment remote commander.
   At this time, measure the moving amount t2 (msec) of the falling edge of the waveform.
9) Turn off the HOLD switch.
10) Obtain D_{AC}' using the following equation (decimal calculation).
    $D_{AC}' = (2.5/t2) \times [1.00/ (\text{Pitch sensor sensitivity})] \times 104$
    Note: The pitch sensor sensitivity (SE150) of CD-245 board) is labeled only on the repair part.
11) Raise D_{AC}' to a whole number, convert it to a hexadecimal digit and take this as D_{AC}. (Refer to Table 5-2-1. "Hexadecimal - Decimal conversion table" of "5-2. SERVICE MODE".)
12) Turn on the HOLD switch.
13) Select page: F, address: AC, set data: D_{AC}, and press the pause button of the adjustment remote commander.
14) Select page: B, address: FE, set data: 08, and press the pause button.

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.
2) Turn off the HOLD switch.
3) Check that the steady shot operation is performed normally.

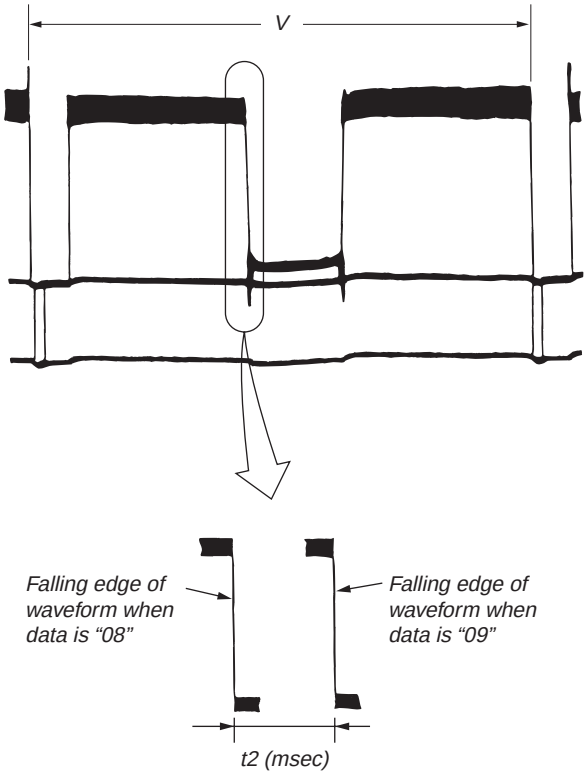


Fig. 5-1-18.

1-5. LCD SYSTEM ADJUSTMENT

Before perform the LCD system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENT" are satisfied.

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 3: Set the LCD BRIGHT (Menu) to the center.

[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN803 of FC-72 board.

Connect the Measuring Instruments via the CPC-12 jig (J-6082-436-A).

The following table shows the Pin No. and signal name of CN803 of FC-72 board.

Pin No.	Signal Name	Pin No.	Signal Name
1	FDDRF B	12	LANC OUT
2	FDDRF A	13	MAKER RECOG
3	INDEX	14	PF7
4	REG GND	15	TXD
5	XCPC IN	16	RXD
6	TRAK 00	17	RESET
7	HSY	18	HI VDD
8	COM	19	EVF BL+
9	VG	20	EVF BL 4.75 V
10	HI UNREG	21	EVF VG
11	LANC IN	22	EVF VCO

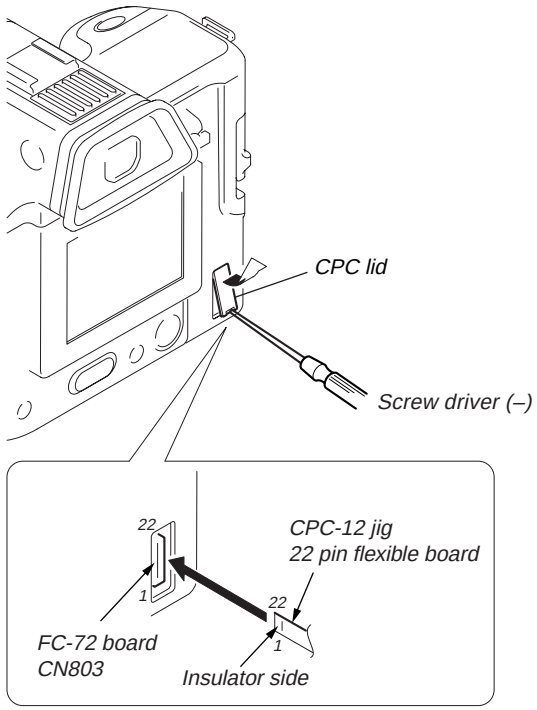


Fig. 5-1-19.

1-5-1. LCD Type Check

By measuring the resistor value between Pin ⑬ of CN803 and Pin ④ of CN803, the type of LCD can be discriminated.

Resistor value	LCD type	Adjustment
4.7 kΩ	TYPE SH	Perform "1-5-2. LCD SYSTEM
47 kΩ	TYPE CA	ADJUSTMENT

1-5-2. LCD SYSTEM ADJUSTMENT

1. LCD Initial Data Input

Mode	PLAY
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	D0 to D9, DC to DF

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, and input the data in the following table.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

Address	Data		Remark
	LCD TYPE SH	LCD TYPE CA	
D0	A2	B2	Bright adj.
D1	66	63	Color adj.
D2	A8	A0	White balance adj.
D3	7A	6A	White balance adj.
D4	B8	C0	Contrast adj.
D5	B0	54	D range adj.
D6	7C	8A	V-COM level adj.
D7	6F	6F	VCO adj. (NTSC)
D8	74	8A	V-COM adj.
D9	7E	73	Fixed data
DC	C0	B5	Fixed data
DD	6F	4F	VCO adj. (PAL)
DE	13	13	Fixed data
DF	00	00	Fixed data

2. VCO Adjustment (PK-49 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑦ of CN803 of FC-72 board (HSY)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	D7 (NTSC) DD (PAL)
Specified Value	LCD TYPE SH: f = 15734 ± 30 Hz (NTSC) f = 15745 ± 30 Hz (PAL) LCD TYPE CA: f = 15734 ± 30 Hz (NTSC) f = 15945 ± 30 Hz (PAL)

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Menu setting:

VIDEO OUT of SET UP menu ..... NTSC
(This adjustment must be performed in NTSC mode, so don't set the menu setting to "PAL".)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F0, set data: 01.
3) Select page: D, address: D7, change the data and set the HSY frequency (f) to the NTSC specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: D, address: DD, change the data and set the HSY frequency (f) to the PAL specified value.
6) Press the PAUSE button.
7) Select page: 5, address: F0, set data: 00.
8) Select page: 0, address: 01, and set data: 00.

3. D Range Adjustment (PK-49 board)

Set the D range of the LCD driver to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN803 of FC-72 board (VG) External trigger: Pin ⑧ of CN803 of FC-72 board (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D5
Specified Value	LCD TYPE SH: A = 3.62 ± 0.05V LCD TYPE CA: A = 2.50 ± 0.05V

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: D, address: D5, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

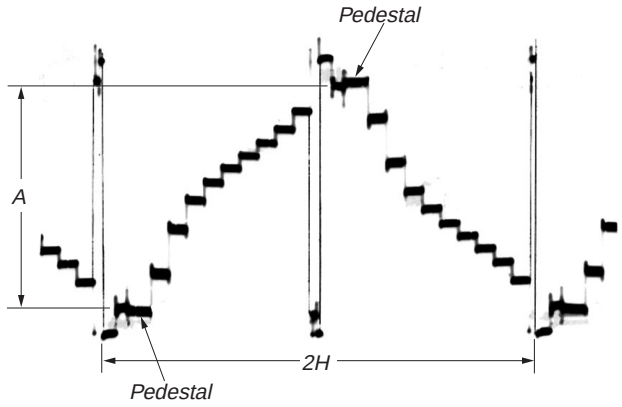


Fig. 5-1-20.

4. Bright Adjustment (PK-49 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN803 of FC-72 board (VG) External trigger: Pin ⑧ of CN803 of FC-72 board (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D0
Specified Value	LCD TYPE SH: A = 2.05 ± 0.05V LCD TYPE CA: A = 1.32 ± 0.05V

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: 2, address: 10, set data: 01.
4) Select page: D, address: D0, change the data and set the voltage (A) between the pedestal and GAMMA1 limiter level to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 2, address: 10, set data: 00.
7) Select page: 5, address: F1, set data: 00.
8) Select page: 0, address: 01, and set data: 00.

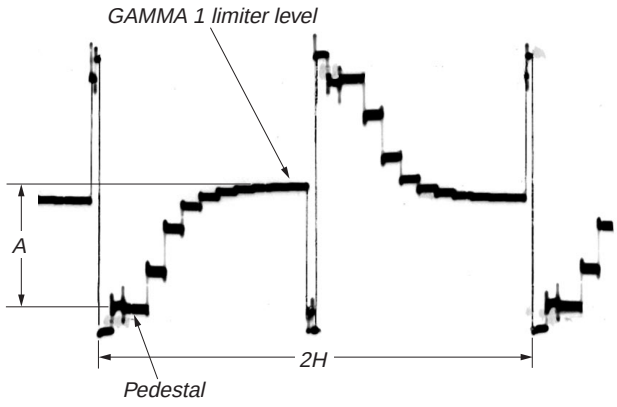


Fig. 5-1-21.

5. Contrast Adjustment (PK-49 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN803 of FC-72 board (VG) External trigger: Pin ⑧ of CN803 of FC-72 board (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D4
Specified Value	LCD TYPE SH: A = 3.17 ± 0.07V LCD TYPE CA: A = 2.35 ± 0.07V

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: D, address: D4, change the data and set the voltage (A) between the pedestal and 10 steps peak to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

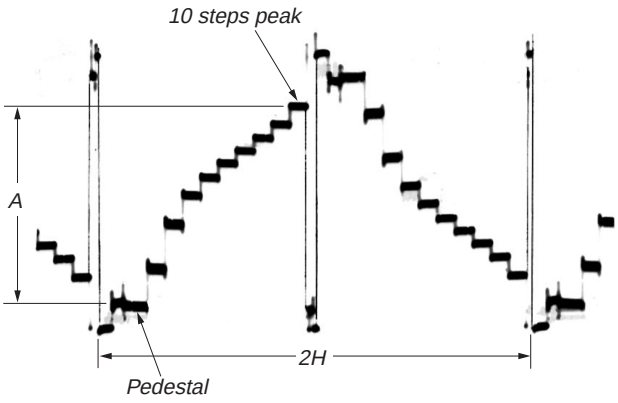


Fig. 5-1-22.

6. Color Adjustment (PK-49 board)

Set the color saturation to the standard value. If deviated, the color will be too dark or light.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN803 of FC-72 board (VG) External trigger: Pin ⑧ of CN803 of FC-72 board (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D1
Specified Value	LCD TYPE SH: A = 500 ± 50mV LCD TYPE CA: A = 360 ± 50mV

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 04.
3) Select page: D, address: D1, change the data and set the voltage (A) between the white 100% (Reference level) and green to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

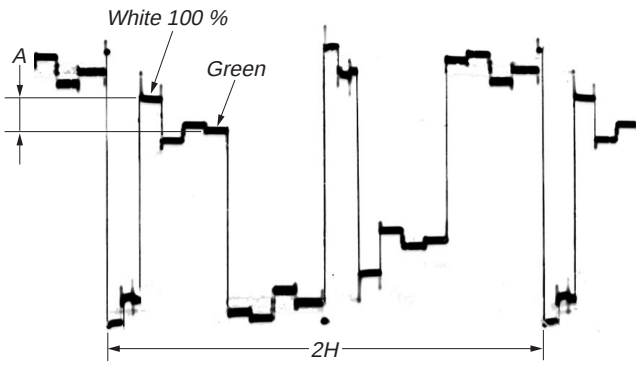


Fig. 5-1-23.

7. V-COM Level Adjustment (PK-49 board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑧ of CN803 of FC-72 board (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D6
Specified Value	LCD TYPE SH: A = 6.50 ± 0.05V LCD TYPE CA: A = 5.65 ± 0.05V

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: D6, change the data and set the V-COM signal level (A) to the specified value.
3) Press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.

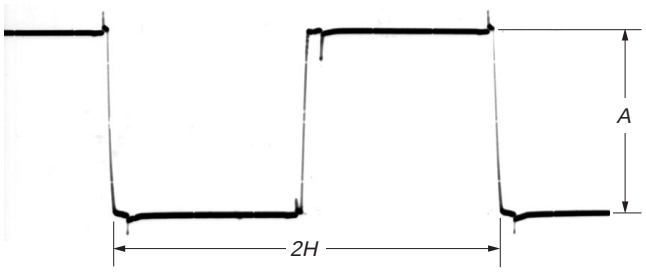


Fig. 5-1-24.

8. V-COM Adjustment (PK-49 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	D8
Specified Value	The brightness difference between the section A and section B is minimum.

Note: Perform "Bright Adjustment" and "Contrast Adjustment" before this adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 02.
3) Select page: 2, address: 10, set data: 02.
4) Select page: D, address: D8, change the data so that the brightness of the section A and that of the section B is equal.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 5, address: F1, set data: 00.
7) Select page: 2, address: 10, set data: 00.
8) Select page: 0, address: 01, and set data: 00.

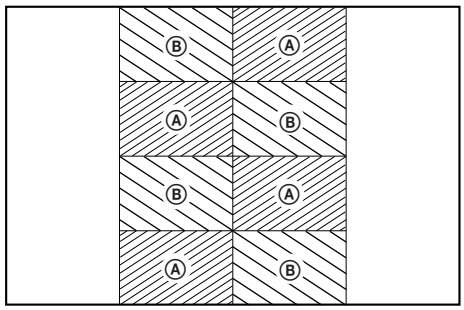


Fig. 5-1-25.

9. White Balance Adjustment (PK-49 board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	D2, D3
Specified Value	The LCD screen should not be colored.

Note 1: Use the AC power adaptor during this adjustment.
Note 2: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC802

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 02.
3) Select page: D, address: D2 and D3, set the data to the initial value.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

	Address		Remark
	D2	D3	
Data	A8	7A	LCD TYPE SH
	A0	6A	LCD TYPE CA

4) Check that the LCD screen is not colored. If colored, change the data of page: D, address: D2 and D3 so that the LCD screen is not colored.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

1-6. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

Before perform the color electronic viewfinder system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENT" are satisfied.

Note1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note3: Cover the lens of the viewfinder with a white paper, or perform the following data setting. (Except for the eye sensor adjustment.)

Data setting during viewfinder system adjustments:

Perform the following data setting before the viewfinder system adjustments. (Except for the eye sensor adjustment.)

1) Select page: 2, address: 11, and set data: 80.

After completing the viewfinder system adjustments, release the data setting.

1) Select page: 2, address: 11, and set data: 00.

[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN803 of FC-72 board.

Connect the Measuring Instruments via the CPC-12 jig (J-6082-436-A).

The following table shows the Pin No. and signal name of CN803 of FC-72 board.

Pin No.	Signal Name	Pin No.	Signal Name
1	FDDRF B	12	LANC OUT
2	FDDRF A	13	MAKER RECOG
3	INDEX	14	PF7
4	REG GND	15	TXD
5	XCPC IN	16	RXD
6	TRAK 00	17	RESET
7	HSY	18	HI VDD
8	COM	19	EVF BL+
9	VG	20	EVF BL 4.75 V
10	HI UNREG	21	EVF VG
11	LANC IN	22	EVF VCO

Table 5-1-9.

1. Initial Data Input

Mode	PLAY
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	C0 to CD

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, and input the data in the following table.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

Address	Data	Remark
C0	67	Fixed data
C1	A0	White balance adj.
C2	70	White balance adj.
C3	40	Fixed data
C4	57	Fixed data
C5	60	VCO adj. (NTSC)
C6	B0	Backlight consumption current adj.
C7	A8	Fixed data
C8	00	Fixed data
C9	24	Bright adj. (NTSC)
CA	80	Contrast adj. (NTSC)
CB	20	Bright adj. (PAL)
CC	80	Contrast adj. (PAL)
CD	60	VCO adj. (PAL)

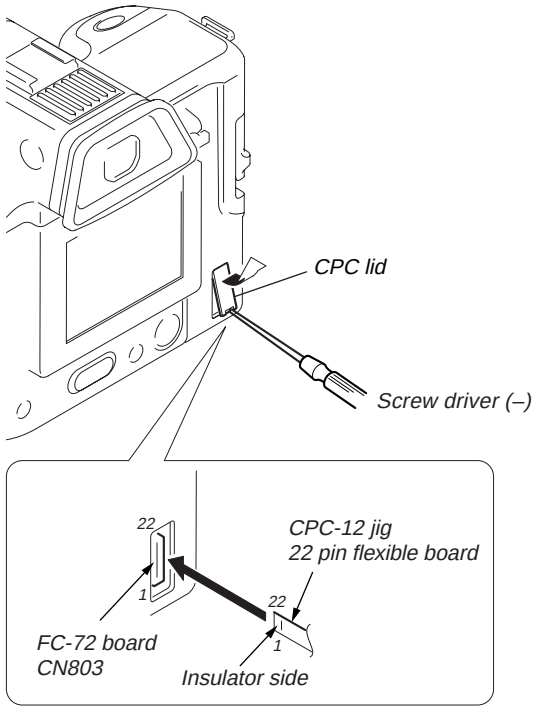


Fig. 5-1-26.

2. VCO Adjustment (VF-143 board)

Set the VCO free-run frequency. If deviated, the EVF screen will be blurred.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ㉒ of CN803 of FC-72 board (EVF VCO)
Measuring Instrument	Oscilloscope (DC range)
Adjustment Page	D
Adjustment Address	C5 (NTSC) CD (PAL)
Specified Value	A = 1.70 ± 0.06V (NTSC) A = 1.25 ± 0.06V (PAL)

Menu setting:

VIDEO OUT of SET UP menu ..... NTSC
(This adjustment must be performed in NTSC mode, so don't set the menu setting to "PAL".)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Check the GND level of the oscilloscope.
3) Select page: D, address: C5, change the data and set the VCO output voltage (A) to the PAL specified value.
4) Select page: D, address: C5, read the data, and this data is named D_{C5}.
5) Select page: D, address: CD, set data: D_{C5}, and press the PAUSE button.
6) Select page: D, address: C5, change the data and set the VCO output voltage (A) to the NTSC specified value.
7) Press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

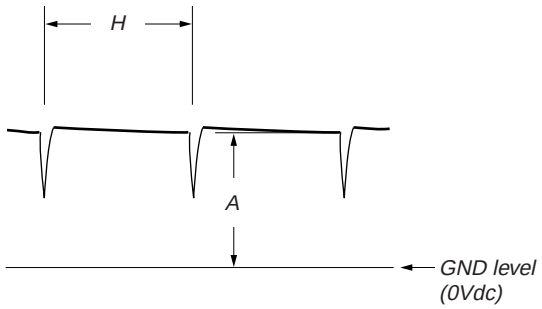


Fig. 5-1-27.

3. Contrast Adjustment (VF-143 board)

Set the power supply voltage for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ㉑ of CN803 of FC-72 board (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	CA (NTSC) CC (PAL)
Specified Value	A = 2.12 ± 0.10V (NTSC) A = 2.16 ± 0.10V (PAL)

Menu setting:

VIDEO OUT of SET UP menu ..... NTSC
(This adjustment must be performed in NTSC mode, so don't set the menu setting to "PAL".)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: D, address: CA, change the data and set the voltage (A) between the pedestal and 10 steps peak to the NTSC specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: D, address: CC, change the data and set the voltage (A) between the pedestal and 10 steps peak to the PAL specified value.
6) Press the PAUSE button.
7) Select page: 5, address: F1, set data: 00.
8) Select page: 0, address: 01, and set data: 00.

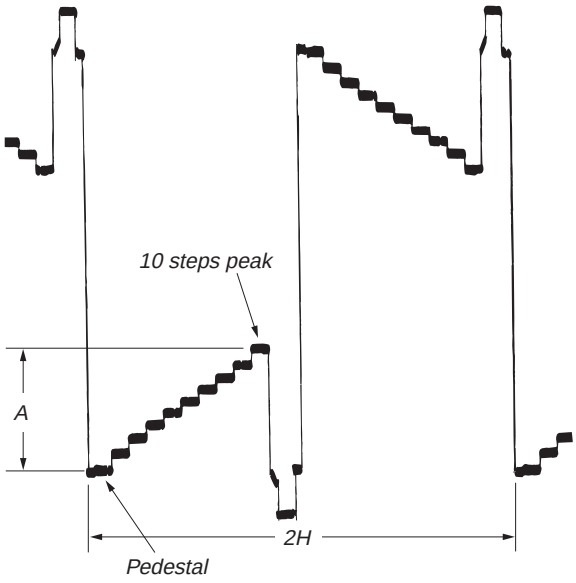


Fig. 5-1-28.

4. Bright Adjustment (VF-143 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ㉑ of CN803 of FC-72 board (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	C9 (NTSC) CB (PAL)
Specified Value	A = 7.2 ± 0.1V (NTSC) A = 7.3 ± 0.1V (PAL)

Note: This adjustment and "Contrast Adjustment" must be repeated alternately until both specifications are satisfied simultaneously (called tracking adjustment).

Menu setting:

VIDEO OUT of SET UP menu ..... NTSC
(This adjustment must be performed in NTSC mode, so don't set the menu setting to "PAL".)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: D, address: C9, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the NTSC specified value.
4) Press the PAUSE button.
5) Select page: D, address: CB, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the PAL spacified value.
6) Press the PAUSE button.
7) Select page: 5, address: F1, set data: 00.
8) Select page: 0, address: 01, and set data: 00.
9) Check that the specified value of the "Contrast Adjustment" is satisfied at this time. If it is found that the specified value is not satisfied, perform "Contrast Adjustment" again, then perform "Bright Adjustment" once again.

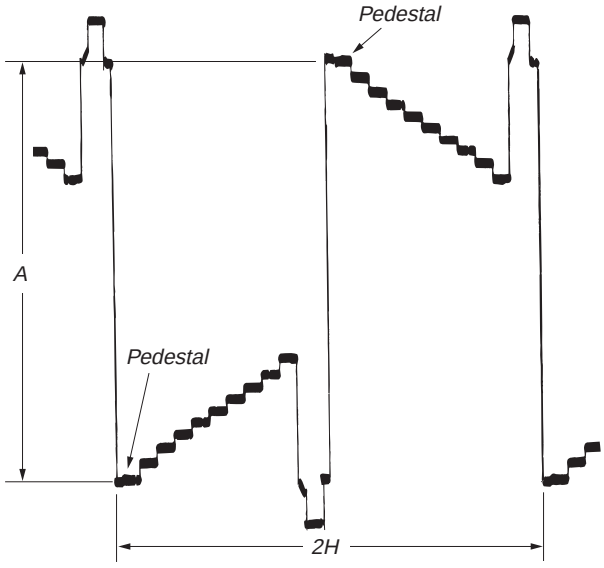


Fig. 5-1-29.

5. Backlight Consumption Current Adjustment (VF-143 board)

Set the backlight luminance and color temperature.
If deviated, the image may become dark or bright.

Mode	PLAY
Signal	Arbitrary
Measurement Point	+ Probe: Pin ⑲ of CN803 of FC-72 board (EVF BL+) – Probe: Pin ⑳ of CN803 of FC-72 board (EVF BL 4.75V)
Measuring Instrument	Digital voltmeter
Adjustment Page	D
Adjustment Address	C6
Specified Value	A=15.0 ± 1.0mVdc

Note: Adjust 30 seconds after running on the power supply.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: C6, change the data and set the voltage difference (A) between Pin ⑲ of CN803 (EVF BL+) and Pin ⑳ of CN803 (EVF BL 4.75V) to the specified value
3) Press the PAUSE button of the adjusting remote commander.
4) Select page: 0, address: 01, and set data: 00.

6. White Balance Adjustment (VF-143 board)

Correct the white balance.
If deviated, the EVF screen color cannot be reproduced.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	C1, C2
Specified Value	The EVF screen should not be colored.

Note: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC502

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 02.
3) Select page: D, address: C1 and C2, set the data to the initial value.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	C1	C2
Data	A0	70

4) Check that the EVF screen is not colored. If colored, change the data of page: D, address: C1 and C2 so that the EVF screen is not colored.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

7. Eye Sensor Adjustment (VF-143 board)

Adjust the eye sensor, and maintain at the level at which the backlight is AUTO ON.

Mode	Camera
Subject	Arbitrary
Measurement Point	Display data of page 2, address: 82
Measuring Instrument	
Adjustment Page	D
Adjustment Address	EC
Specified Value	0A (15cm away) 0E (8cm away)

Note1: Do not perform this adjustment in strong light or under lights.
Note2: During this adjustment release the data setting for the viewfinder. Select page: 2, address: 11, and set data: 00.

Adjustment preparation:

1) Prepare a 30cm × 30cm gray paper, and place it 10 cm away from the EVF lens.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Place the gray paper 10cm away from the EVF lens.
3) Select page: 2, address: 82, read the data, and this data is named D_{ref}.
4) Convert D_{ref} to decimal notation, and obtain D_{ref}'. (Refer to Table 5-2-1. Hexadecimal-decimal Conversion Table.).
5) Calculate D_{EC}' using following equation (Decimal calculation). convert it to a hexadecimal number, and input to address: EC.
   $D_{EC}' = D_{ref}' - 10$
6) Press the PAUSE button.
7) Select page: 0, address: 01, and set data: 00.

Checking method:

1) Place the gray paper 15cm away from the EVF lens.
2) Select page: 2, address: 41, and check that the data is "0A".
3) Place the gray paper 8cm away from the EVF lens.
4) Select page: 2, address: 41, and check that the data is "0E".

1-7. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Battery End Adjustment (FC-72 board)

Check the battery end voltage.

Mode	STILL
Subject	All black (Cover the lens with a black cap)
Measurement Point	Display data of page: 2, address: 52
Measuring Instrument	Adjustment remote commander
Adjustment Page	D
Adjustment Address	90 to 94

Switch setting:

FOCUS ..... MANUAL
STEADY SHOT ..... OFF

Connection:

1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-1-30.

Adjusting method:

1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 6.1 ± 0.1Vdc.
2) Turn off the power supply.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Turn on the power supply.
5) Select page: 0, address: 01, and set data: 01.
6) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 5.50 ± 0.01Vdc.
7) Select page: 2, address: 52, read the data, and this data is named Dref.
8) Select page: D, address: 90, set data: Dref, and press the PAUSE button of the adjustment remote commander.
9) Convert Dref to decimal notation, and obtain Dref'. (Refer to Table 5-2-1. "Hexadecimal-decimal conversion table" of "5-2. Service mode")
10) Calculate D_{91}', D_{92}', D_{93}', and D_{94} using following equations (decimal calculation), convert it to a hexadecimal number, and input each adjustment address.
    Address: 91 D_{91}' = Dref'+5
    Address: 92 D_{92}' = Dref'+23
    Address: 93 D_{93}' = Dref'+44
    Address: 94 D_{94}' = Dref'+55
    Note: After setting each data, be sure to press the PAUSE button.
11) Select page: 0, address: 01, and set data: 00.

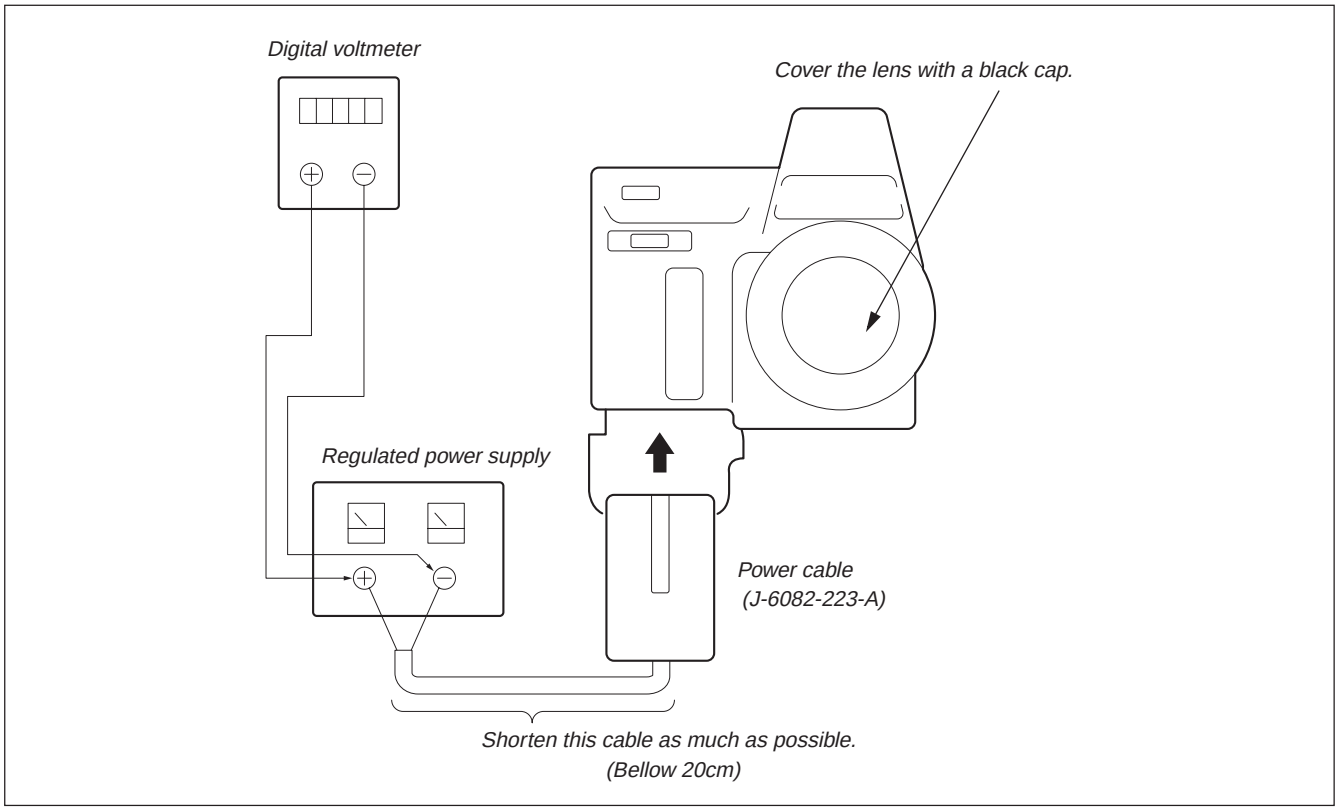


Fig. 5-1-30.

2. Alignment Check (FDD UNIT)

Confirm that the FDD alignment is within the specifications.
If deviated, reading and writing data from and to the floppy disk become impossible. Or compatibility of the floppy disk with other machines can be lost.

Mode	Playback
Signal	Alignment disks (TFD2-1(+) and TFD2-2(–)): Arbitrary signal
Measurement Point	Check on LCD screen
Measuring Instrument	
Specified Value	The playback pictures should be normal.

Checking method:

1) Disconnect the adjustment remote commander.
2) Insert the alignment disk TFD2-1(+) (+17.5 μm).
3) Playback arbitrary signal and check that the playback picture is normal.
4) Insert the alignment disk TFD2-2(–) (–17.5 μm).
5) Playback arbitrary signal and check that the playback picture is normal.

[Alignment disk]

Use the alignment disks (two disks as pair) shown in below.
Disk-1: TFD2-1(+) (Parts code: 8-967-990-01)
Disk-2: TFD2-2(–) (Parts code: 8-967-990-11)

Contents of alignment disk

TFD2-1(+): (Common signal) + (+17.5 μm alignment)
TFD2-2(–): (Common signal) + (–17.5 μm alignment)

Common signal

File name	Signal
MVC-001C.JPG	Color bars
MVC-002M.JPG	Monoscope
MVC-003V.JPG	V-COM adjustment signal
MVC-004W.JPG	100% white
MVC-005H.JPG	50% white
MVC-006T.JPG	Stair-step signal of 10 step
MVC-007R.JPG	Red single color
MVC-008G.JPG	Green single color
MVC-009B.JPG	Blue single color
MVC-010D.JPG	Camera color bars
MVC-011N.JPG	Camera monoscope

5-2. SERVICE MODE

2-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the Adjustment Remote Commander

1) Connect the adjustment remote commander to the following connector or jack.
   • CN803 of FC-72 board via CPC-12 jig (J-6082-436-A)
   • LANC jack
2) Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-2-1.

Fig. 5-2-1.

3) Operate the adjustment remote commander as follows.
   • Changing the page
   The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0 1 2 3 4 5 6 7 8 9 A B C D E F
LCD Display	0 1 2 3 4 5 6 7 8 9 A b c d E F
Decimal notation conversion value	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   • Changing the address
   The address increases when the FF (►►) button is pressed, and decreases when the REW (◄◄) button is pressed. There are altogether 256 addresses, from 00 to FF.
   • Changing the data (Data setting)
   The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   • Writing the adjustment data
   The PAUSE button must be pressed to write the adjustment data (B, D, E, F, 7 page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply once.

2. Precautions Upon Using the Adjustment Remote Commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

2-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

Upper digit of hexadecimal \ Lower digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (C)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	77	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (C)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

② (above the D (d) column)

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-2-1.

2-3. SERVICE MODE

1. Setting the Test Mode

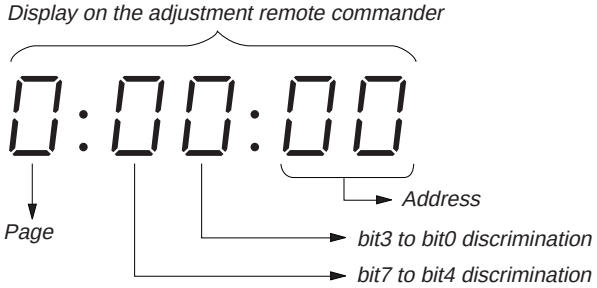
Page D	Address 10

Data	Function
00	Normal
01	Forced STILL mode power ON
02	Forced PLAY mode power ON
03	Forced MOVIE mode power ON

- Before setting the data, select page: 0, address: 01, and set data: 01.
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, be sure to return the data of this address to “00”, and press the PAUSE button of the adjustment remote commander.
  Select page: 0, address: 01, and set data: 00.

2. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for following items. Use the table below to discriminate if the bit value is “1” or “0”.



	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (A)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Example: If “8E” is displayed on the adjustment remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

3. Emergency Memory Address of Flash Unit

Page D	Address 67

Data	Function
00	No error
04	Flash unit emergency

Using method:

1) When emergency occurs in the flash unit, the data corresponding to the error is written in the address
   Note: When replacing the flash unit, initialize this data.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 67, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

4. Record of Use check

Page D	Address 6C to 6F

Address	Function	Remarks
6C	Recording counter (Hexadecimal)	Counter data 1
6D		Counter data 2
6E		Counter data 3
6F	Recording counter (Hexadecimal) / MC CAM emergency	Counter data 4 **Note:** When this data is "80" to "FF", the MC CAM (FC-72 board IC501) is abnormal.

Note: When replacing the floppy disk drive unit, initialize these data.

Using method:

1) The recording counter data is displayed at page: D, addresses: 6C to 6F. These data are named D_{6C}, D_{6D}, D_{6E} and D_{6F} respectively.
2) Convert D_{6C}, D_{6D}, D_{6E} and D_{6F} to decimal notation, and obtain D_{6C}', D_{6D}', D_{6E}' and D_{6F}'.
   (Refer to Table 5-2-1. "Hexadecimal-decimal conversion table")
3) Calculate the recording counter (N) using following equation. (Decimal calculation)
   $N = D_{6C}' + D_{6D}' \times 256 + D_{6E}' \times 65536 + D_{6F}' \times 16777216$

Initializing method:

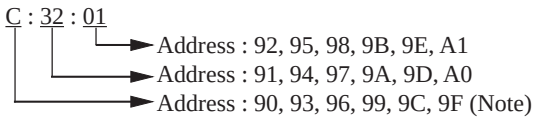
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 6C to 6F, and write data: 00 to each address.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

5. Self Diagnostics Log check

Page 2	Address 90 to A2

Address	Function
90	1st error occurrence code
91	
92	
93	2nd error occurrence code
94	
95	
96	3rd error occurrence code
97	
98	
99	4th error occurrence code
9A	
9B	
9C	5th error occurrence code
9D	
9E	
9F	6th error occurrence code
A0	
A1	
A2	Numbers of error occurrence (0 to 6)

Example:



Note: "C" → "01"
"E" → "03"

Using method:

1) The self diagnostics log is displayed at page: 2, addresses: 90 to A2.
   Note: This data will be erased when the battery or DC power supply is removed.

6. Switch Check (1)

Page 2	Address 43

Bit	Function	When bit value = 1	When bit value = 0
0	XPOWER SW (PK-49 board S703)	OFF	ON
1	XCAM/PLAY SW (PK-49 board S708)	PLAY	STILL or MOVIE
2	SHUTTR SW	OFF	ON
3	XSHUTTER LOCK SW (ZOOM/RELEASE block)	OFF	ON
4	DISK IN SW (FDD unit)	IN	OUT
5			
6			
7	XSTILL/MOVIE SW (PK-49 board S710)	MOVIE	STILL or PLAY

Using method:

1) Select page: 2, address: 43.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

7. Switch Check (2)

Page 2	Address 54 to 58

Using method:

1) Select page: 2, address: 54 to 58.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data						
	00 to 12	13 to 3A	3B to 62	63 to 87	88 to B3	B4 to D5	D6 to FF
54 (KEY AD0) (IC404 ⑦⑧)					MACRO (CF-074 board)	FOCUS MANUAL (CF-074 board)	FOCUS AUTO (CF-074 board)
55 (KEY AD1) (IC404 ⑦⑨)	CONTROL DOWN (PK-49 board) (S701)	CONTROL UP (PK-49 board) (S701)	DISPLAY (PK-49 board) (S702)	VOLUME + (PK-49 board) (S704)	VOLUME – (PK-49 board) (S706)	LCD ON/OFF (PK-49 board) (S711)	No key input
56 (KEY AD2) (IC404 ⑧⓪)	CONTROL RIGHT (PK-49 board) (S701)	CONTROL LEFT (PK-49 board) (S701)	CONTROL SET (PK-49 board) (S701)	FLASH (PK-49 board) (S705)			No key input
57 (KEY AD1) (IC404 ⑧①)						STEADY SHOT ON (CF-074 board)	STEADY SHOT OFF (CF-074 board)
58 (KEY AD1) (IC404 ⑧②)	+ (AE-022 board)	– (AE-022 board)	PROGRAM AE (AE-022 board)	WHITE BALANCE (AE-022 board)	WHITE BALANCE PUSH AUTO (S707)	SPOT METER (AE-022 board)	No key input

8. LED Check

Page 2	Address 06	Bit1

Using method:

1) Select page: 2, address: 06, and set the bit value of Bit1 to “1”.
2) Check that all LED except for the ACCESS LED are lit.
3) Select page: 2, address: 06, and set the bit value of Bit1 to “0”.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

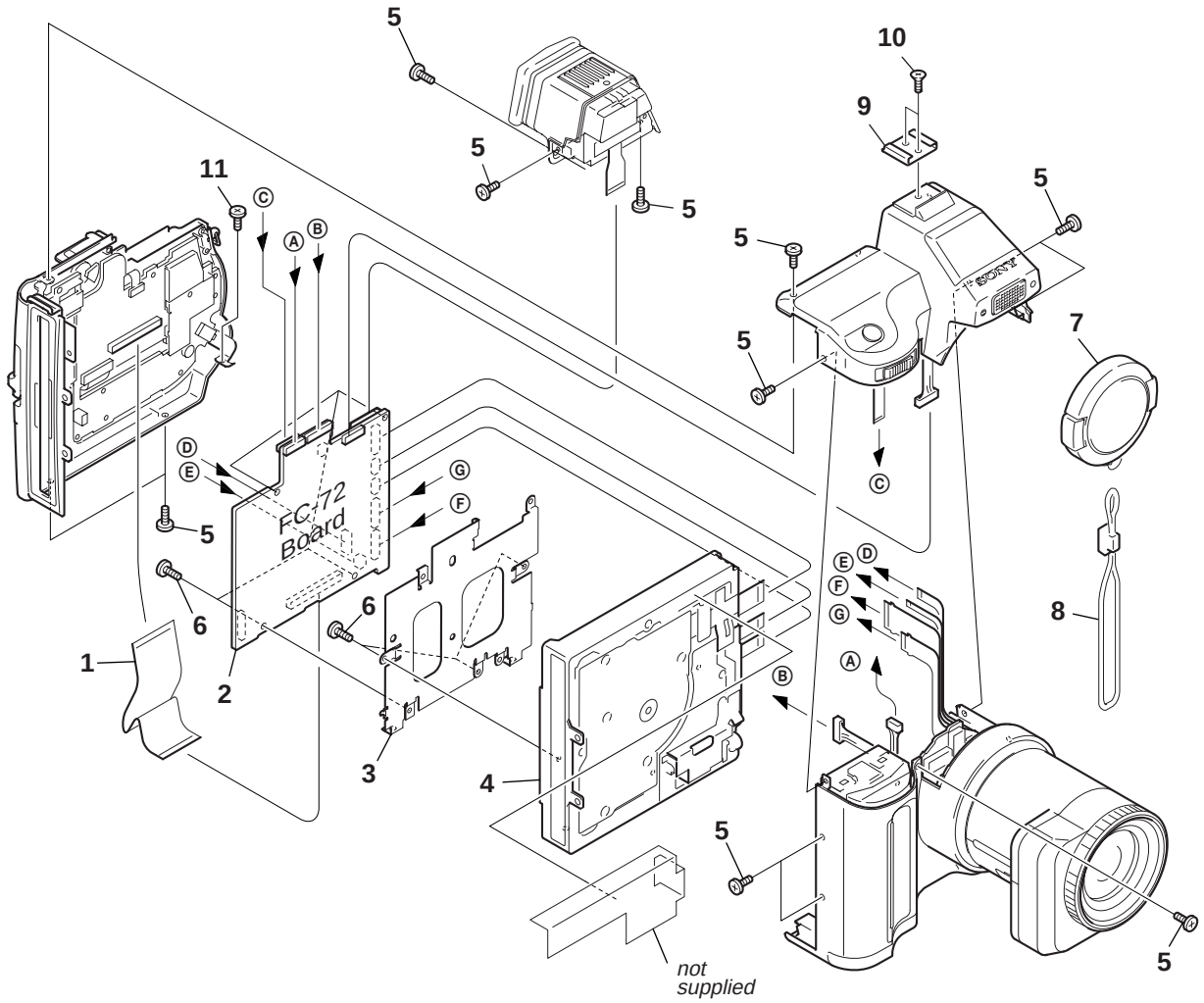
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  CND : Canadian model.
  AUS : Australian model.
  HK : Hong Kong model.
  KR : Korea model.
  JE : Tourist model.
  J : Japanese model.

The components identified by mark ⚠or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

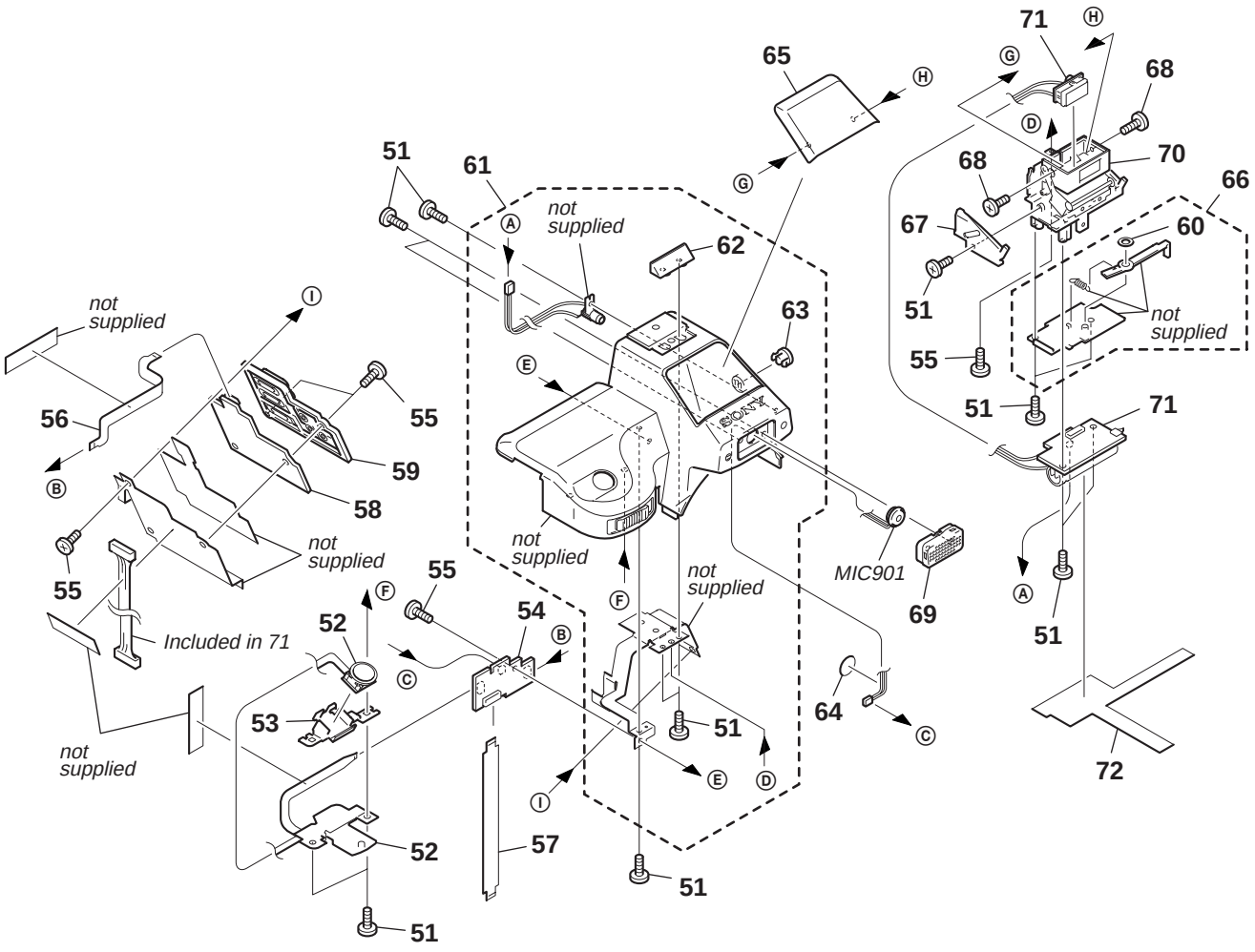
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. OVERALL ASSEMBLY SECTION



Ref. No.	Part No.	Description	Remarks
1	1-678-338-11	FP-175 FLEXIBLE BOARD	
2	A-7096-165-A	FC-72(95) BOARD, COMPLETE (SERVICE)	
* 3	3-062-814-01	FRAME, FDD	
4	1-772-563-11	DRIVE, FLOPPY DISK	
5	3-968-729-91	SCREW(M2), LOCK ACE, P2	
6	7-627-854-07	PRECISION SCREW +P 2X2.5 TYPE3	
7	X-3950-691-1	CAP ASSY, LENS	
8	3-062-043-01	STRING CAP	
9	3-724-511-51	SHOE, ACCESSORY	
10	3-056-624-01	LOCK ACE, +K SCREW (M2)	
11	3-968-729-51	SCREW (M2), LOCK ACE, P2	

6-1-2. TOP CABINET ASSEMBLY SECTION

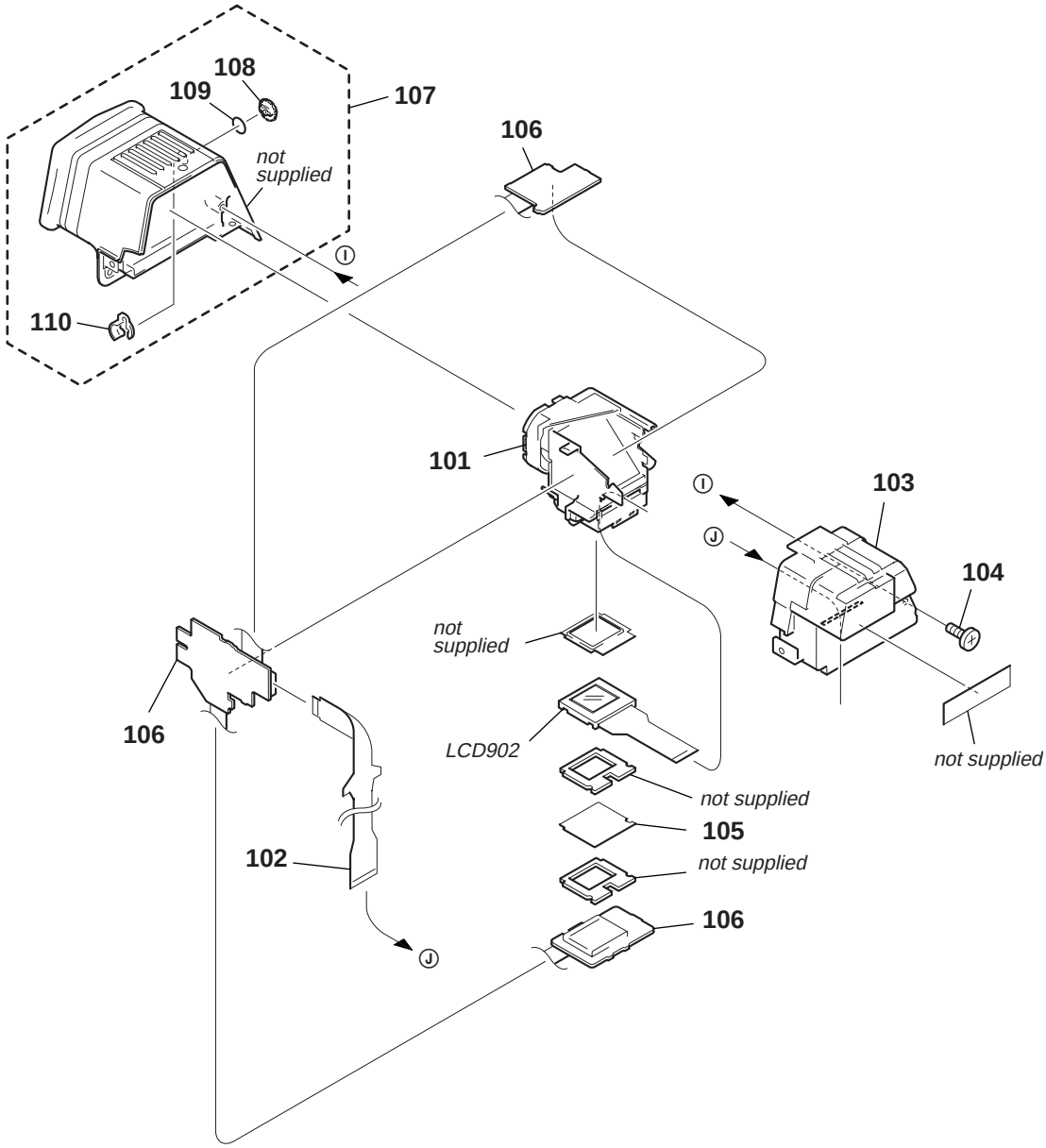


Ref. No.	Part No.	Description	Remarks
51	3-948-339-61	TAPPING	
52	1-418-896-11	SWITCH BLOCK, CONTROL (ZOOM BLOCK 360) (ZOOM AND SHUTTER)	
53	3-060-905-01	HOLDER (360), SW	
54	A-7074-451-A	MA-379 BOARD, COMPLETE	
55	3-968-729-91	SCREW (M2), LOCK ACE, P2	
56	1-678-328-11	FP-174 FLEXIBLE BOARD	
57	1-678-325-11	FP-171 FLEXIBLE BOARD	
58	A-7074-452-A	AE-022 BOARD, COMPLETE	
59	3-060-898-01	BUTTON, AE	
60	3-695-567-01	WASHER (1.4), SPECIAL	
61	X-3950-612-1	CABINET ASSY, TOP	
62	3-060-913-01	STOPPER, SHOE	

Ref. No.	Part No.	Description	Remarks
63	3-060-868-01	BUTTON, OPEN	
64	3-062-299-01	SHEET, MICROPHONE	
65	3-060-902-01	CABINET (UPPER), ST	
66	X-3950-615-1	BLIND ASSY	
67	3-060-871-01	BASE, TILT	
68	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2	
69	X-3950-614-1	GRILLE ASSY, MICROPHONE	
70	X-3950-613-1	ST ASSY	
⚠71	1-476-069-11	FLASH UNIT	
* 72	3-062-816-01	SHEET, WATERPROOF	
MIC901	1-542-428-11	MICROPHONE UNIT	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

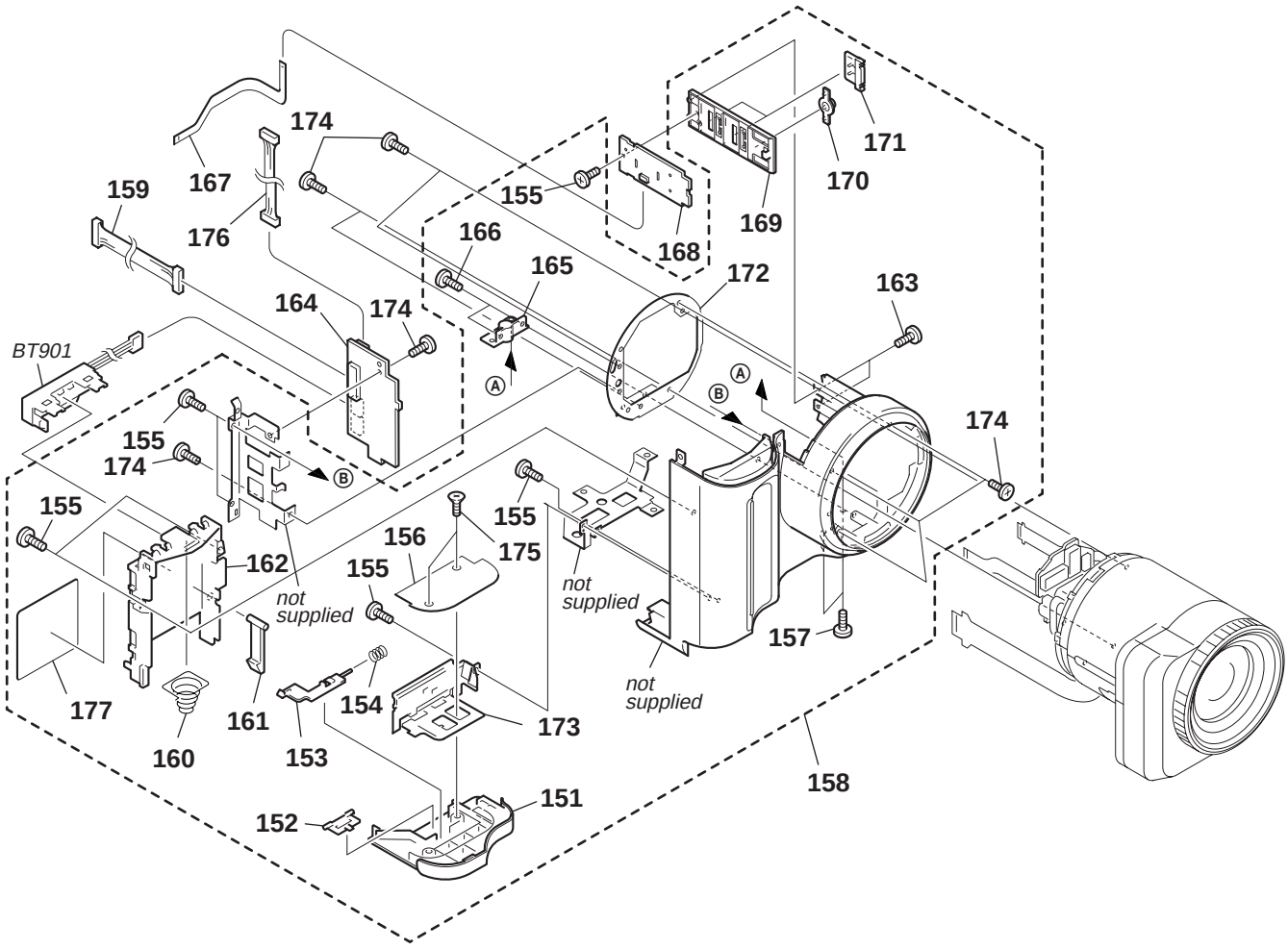
6-1-3. EVF BLOCK ASSEMBLY SECTION



Ref. No.	Part No.	Description	Remarks
101	X-3950-617-1	LENS ASSY, VF	
102	1-678-327-12	FP-173 FLEXIBLE BOARD	
103	3-060-922-01	LID, VF	
104	3-948-339-61	TAPPING	
105	3-058-233-01	ILLUMINATOR (97), BL	
106	A-7074-453-A	VF-143 BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remarks
107	X-3950-616-1	CABINET ASSY, VF	
108	3-060-836-01	KNOB, VISIBILITY ADJUSTMENT	
109	3-950-044-01	RING, O	
110	3-060-921-01	ARM, VISIBILITY ADJUSTMENT	
LCD902	8-753-026-77	LCX033AK-J	

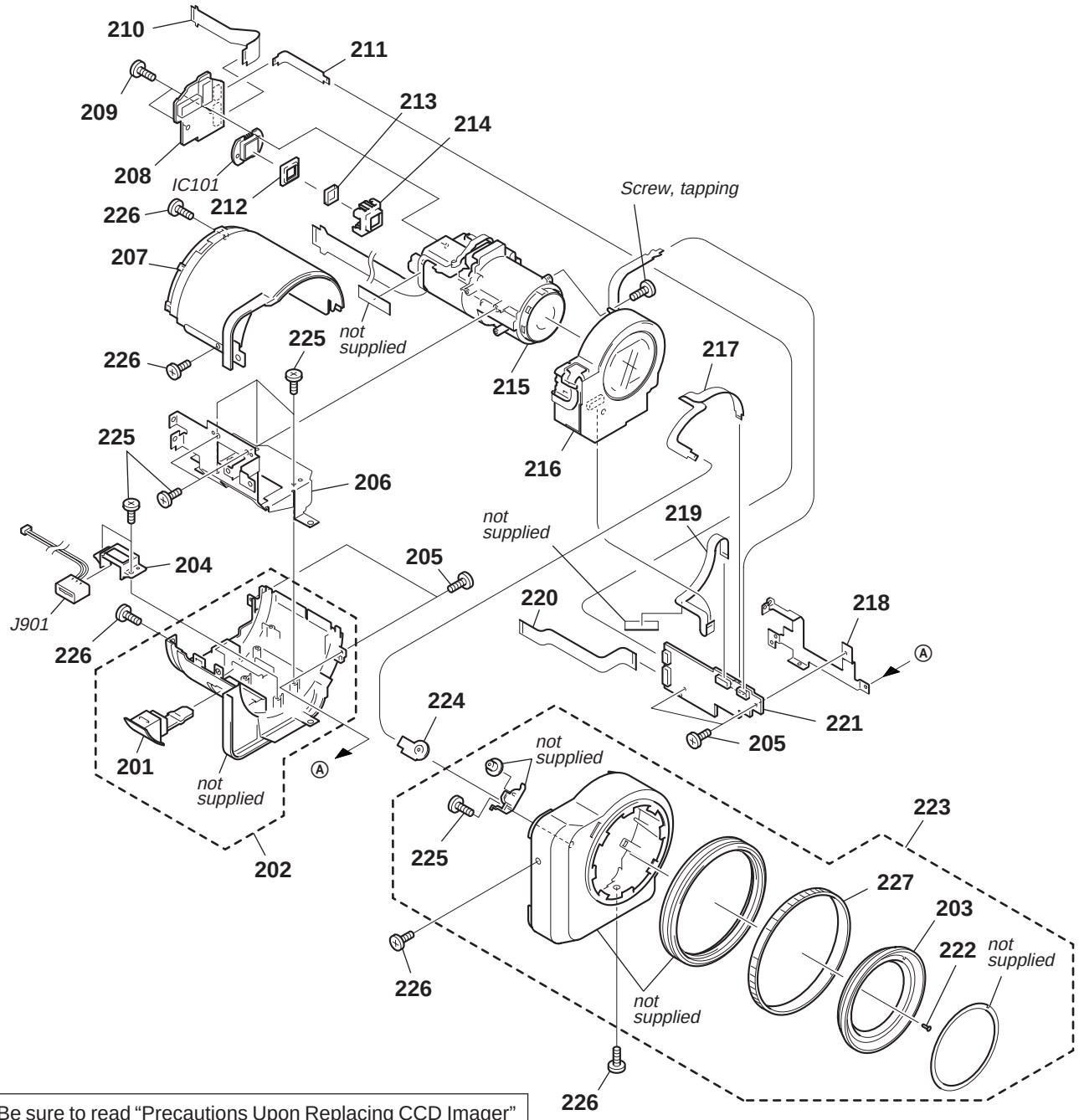
6-1-4. CABINET (FRONT) BLOCK ASSEMBLY SECTION



Ref. No.	Part No.	Description	Remarks
151	3-060-842-01	LID, BATTERY	
152	3-058-748-01	KNOB, B LOCK	
153	3-058-749-01	LEVER, B LOCK	
154	3-058-802-01	SPRING, B LOCK	
155	3-948-339-61	TAPPING	
* 156	3-058-753-01	RETAINER, HINGE	
157	3-719-381-01	SCREW (M2X4)	
158	X-3950-609-1	CABINET (FRONT) ASSY	
159	1-960-552-11	HARNESS (FU-53)	
160	3-969-380-01	SPRING, BATTERY	
161	3-052-574-01	CLAW, BT LOCK	
162	3-058-746-01	HOLDER, BATTERY	
163	3-966-178-01	SCREW (1.7)	
164	A-7074-446-A	FU-139 BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remarks
165	3-050-468-01	SCREW, TRIPOD	
166	3-713-790-31	SCREW (M2X8), TAPPING, P3	
167	1-678-326-11	FP-172 FLEXIBLE BOARD	
168	A-7074-450-A	CF-074 BOARD, COMPLETE	
169	3-060-895-01	HOLDER, SS	
170	3-060-897-01	BUTTON, MACRO	
171	3-060-896-01	KNOB, SS	
172	3-060-843-01	PLATE, L FIXED	
173	X-3950-24601	HOLDER ASSY, HINGE	
174	3-968-729-51	SCREW (M2), LOCK ACE, P2	
175	3-736-363-41	TAPPING	
176	1-960-553-11	HARNESS (FU-54)	
* 177	3-058-801-01	SHEET, ST INSULATING	
BT901	1-694-297-21	TERMINAL BOARD, BATTERY	

6-1-5. LENS COMPLETE ASSEMBLY SECTION

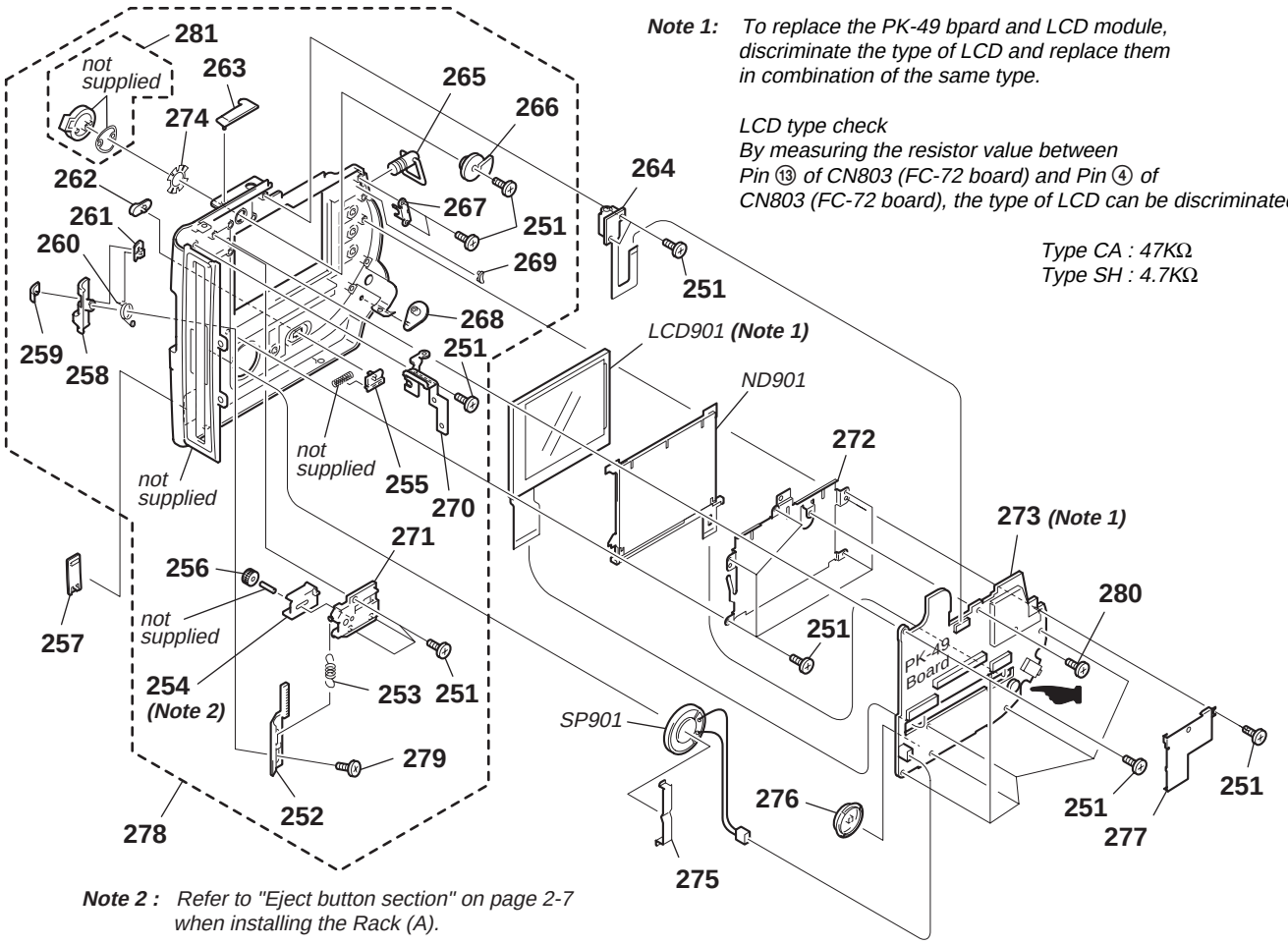


Be sure to read “Precautions Upon Replacing CCD Imager” on page 4-8 when changing the CCD imager.

Ref. No.	Part No.	Description	Remarks
201	3-060-893-01	COVER, DC IN	
202	X-3950-618-1	CABINET (LB) ASSY	
203	3-965-098-01	SCREW	
204	3-060-914-01	HOLDER, DC	
205	3-968-729-51	SCREW (M2), LOCK ACE, P2	
206	3-060-894-01	FRAME, LENS	
207	3-060-890-01	CABINET (LT)	
208	A-7074-444-A	CD-245 BOARD, COMPLETE	
209	3-947-268-11	TITE (2), +B TAPPING (P)	
210	1-678-321-11	FP-166 FLEXIBLE BOARD	
211	1-678-324-11	FP-170 FLEXIBLE BOARD	
212	3-060-714-01	RUBBER (CL), SEAL	
213	1-758-436-11	FILTER BLOCK, OPTICAL	
214	3-058-032-01	ADAPTOR (CL), CCD FITTING	
215	3-709-576-01	LENS ASSY	

Ref. No.	Part No.	Description	Remarks
216	3-709-575-01	VAP ASSY	
217	1-678-330-11	FP-177 FLEXIBLE BOARD	
218	3-060-892-01	PLATE, VP FIXED	
219	1-678-322-11	FP-168 FLEXIBLE BOARD	
220	1-678-323-11	FP-169 FLEXIBLE BOARD	
221	A-7074-449-A	VP-50 BOARD, COMPLETE	
222	3-965-060-01	PIN, MF FIXED	
223	X-3950-611-1	CABINET (VP) ASSY	
224	1-418-068-11	MF BLOCK	
225	3-948-339-61	TAPPING	
226	3-968-729-91	SCREW (M2), LOCK ACE, P2	
227	3-060-854-01	BAND, RING	
IC101	A-7031-092-A	CCD BLOCK ASSY (CCD IMAGER)	
J901	1-794-045-31	CONNECTOR, DC-IN	

6-1-6. CABINET (REAR) BLOCK ASSEMBLY SECTION



Note 1: *To replace the PK-49 bpard and LCD module, discriminate the type of LCD and replace them in combination of the same type.*

LCD type check
By measuring the resistor value between Pin ⑬ of CN803 (FC-72 board) and Pin ④ of CN803 (FC-72 board), the type of LCD can be discriminated.

Type CA : 47KΩ
Type SH : 4.7KΩ

Note 2 : *Refer to "Eject button section" on page 2-7 when installing the Rack (A).*

☛ : BT701(Lithium battary) PK board on the mount position.(See page 4-33)

Ref. No.	Part No.	Description	Remarks
251	3-948-339-61	TAPPING	
252	3-058-787-01	RACK (A)	
253	3-058-790-01	SPRING, EJECT	
254	3-058-788-01	RACK (B)	
255	3-060-839-01	RETAINER, P KNOB	
256	3-058-786-01	GEAR, PINION	
257	3-058-792-11	LID, CPC	
258	3-058-782-01	KNOB, EJECT	
259	3-058-783-01	BUTTON, LOCK	
260	3-058-785-01	SPRING, LOCK BUTTON	
261	3-058-784-01	RETAINER, LOCK BUTTON	
262	3-060-838-01	KNOB, POWER	
263	3-060-928-01	COVER, ACC JACK	
264	1-678-329-21	FP-176 FLEXIBLE BOARD (INCLUDING JACK)	
265	3-060-931-01	SHAFT, STRAP	
266	3-060-850-01	RETAINER, MODE SELECTION	
267	3-060-848-01	SHEET METAL (R), STRAP	
268	3-060-927-01	COVER, AV JACK	
269	3-060-932-01	DAMPER, FRICTION	
270	3-060-886-01	SHEET METAL (L), STRAP	
271	3-058-789-01	COVER, GEAR	
272	3-060-889-01	PLATE, BL FIXED	
273	A-7074-447-A	PK-49 (CASI) BOARD, COMPLETE	
273	A-7074-448-A	PK-49 (SHAP) BOARD, COMPLETE	
274	3-060-901-01	SHEET METAL, SELECTION CLICK	
* 275	3-058-791-01	RETAINER, SPEAKER	
276	3-061-157-11	BUTTON, FUNCTION	
277	X-3950-622-1	CASE (LOWER) ASSY, Z SHIELD	
278	X-3950-610-1	CABINET (REAR) ASSY	
279	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION	
280	3-968-729-51	SCREW (M2), LOCK ACE, P2	
281	X-3950-848-1	KNOB ASSY, MODE SELECTION (SERVICE)	
LCD901	1-803-858-21	INDICATOR MODULE LIQUID CRYST (SH)	
LCD901	1-803-860-21	INDICATOR MODULE LIQUID CRYST (CA)	
⚠ ND901	1-517-751-21	TUBE, FLUORESCENT,COLD CATHODE	
SP901	1-505-862-41	SPEAKER (2.0 CM)	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... , uPB... , µPB... , uPC... , µPC... , uPD..., µPD...
- Abbreviation
  CND : Canadian model.
  AUS : Australian model.
  HK : Hong Kong model.
  CN : Chinese model.
  KR : Korea model.
  JE : Tourist model.
  J : Japanese model.
- LCD type check
  By measuring the resistor value between Pin ⑬ of CN803 (FC-72 board) and Pin ④ of CN803 (FC-72 board), the type of LCD can be discriminated.
  Type CA: 47 kΩ
  Type SH: 4.7 kΩ

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
	A-7074-452-A	AE-022 BOARD, COMPLETE			
		**********			
					(Ref.No.;7000Series)
		< CONNECTOR >			
CN351	1-766-335-21	CONNECTOR, FFC/FPC 5P			
		< RESISTOR >			
R351	1-216-839-11	METAL CHIP	33K	5%	1/16W
R352	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R353	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R354	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R355	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
		< SWITCH >			
S351	1-771-138-61	SWITCH, KEY BOARD (SPOT METER)			
S352	1-771-138-61	SWITCH, KEY BOARD (WHITE BALANCE)			
S353	1-771-138-61	SWITCH, KEY BOARD (WHITE BALANCE)			
S354	1-771-138-61	SWITCH, KEY BOARD (PROGRAM AE)			
S355	1-771-138-61	SWITCH, KEY BOARD (PROGRAM AE-)			
S356	1-771-138-61	SWITCH, KEY BOARD (PROGRAM AE+)			
	A-7074-444-A	CD-245 BOARD, COMPLETE			
		**********			
					(Ref.No.;2000Series)
		(IC101 is not included in this complted board.)			
		< CAPACITOR >			
C101	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C102	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C103	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C104	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C105	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C106	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C107	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C108	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C109	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C150	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C151	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C152	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C153	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C156	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C157	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C158	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C159	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C160	1-110-666-11	ELECT CHIP	22uF	20%	6.3V
C161	1-110-666-11	ELECT CHIP	22uF	20%	6.3V
C162	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C163	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C164	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C165	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
		< CONNECTOR >			
CN101	1-766-348-21	CONNECTOR, FFC/FPC 18P			
CN102	1-573-347-11	CONNECTOR, FFC/FPC (ZIF) 7P			
		< IC >			
IC101	A-7031-092-A	CCD BLOCK ASSY (CCD imager)			
IC150	8-759-489-19	IC uPC6756GR-8JG-E2			
		< COIL >			
L101	1-414-757-11	INDUCTOR	100uH		
L150	1-412-951-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q101	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q102	8-729-117-73	TRANSISTOR	2SC4178-F13F14-T1		
		< RESISTOR >			
R101	1-216-864-11	METAL CHIP	0	5%	1/16W
R102	1-216-864-11	METAL CHIP	0	5%	1/16W
R103	1-216-805-11	METAL CHIP	47	5%	1/16W
R104	1-216-797-11	METAL CHIP	10	5%	1/16W
R105	1-216-798-11	RES-CHIP	12	5%	1/16W

Be sure to read "Precautions Upon Replacing CCD Imager" on page 4-8 when changing the CCD imager.

Ref. No.	Part No.	Description			Remarks
R106	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R107	1-216-849-11	METAL CHIP	220K	5%	1/16W
R108	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R109	1-216-864-11	METAL CHIP	0	5%	1/16W
R110	1-216-805-11	METAL CHIP	47	5%	1/16W
R112	1-216-296-91	SHORT	0		
R150	1-216-837-11	METAL CHIP	22K	5%	1/16W
R151	1-216-837-11	METAL CHIP	22K	5%	1/16W
R152	1-216-837-11	METAL CHIP	22K	5%	1/16W
R153	1-216-837-11	METAL CHIP	22K	5%	1/16W
R154	1-216-864-11	METAL CHIP	0	5%	1/16W
R155	1-216-853-11	METAL CHIP	470K	5%	1/16W
R156	1-216-833-91	RES-CHIP	10K	5%	1/16W
R157	1-216-833-91	RES-CHIP	10K	5%	1/16W
R158	1-216-853-11	METAL CHIP	470K	5%	1/16W
R159	1-216-835-11	METAL CHIP	15K	5%	1/16W
R160	1-216-835-11	METAL CHIP	15K	5%	1/16W
		< SENSOR >			
SE150	1-803-042-31	SENSOR, ANGULAR VELOCITY (PITCH)			
SE151	1-803-042-41	SENSOR, ANGULAR VELOCITY (YAW)			
	A-7074-450-A	CF-074 BOARD, COMPLETE			
		**********			
					(Ref.No.;7000Series)
		< CONNECTOR >			
CN401	1-766-336-21	CONNECTOR, FFC/FPC 6P			
		< RESISTOR >			
R401	1-216-839-11	METAL CHIP	33K	5%	1/16W
		< SWITCH >			
S401	1-771-138-61	SWITCH, KEY BOARD (MACRO)			
S402	1-762-741-11	SWITCH, SLIDE (FOCUS AUTO/MANUAL)			
S403	1-762-741-11	SWITCH, SLIDE (STEADY SHOT)			

Ref. No.	Part No.	Description	Remarks
	A-7096-165-A	FC-72(95) BOARD, COMPLETE (SERVICE)	
		**********	
		(Ref.No.;1000Series)	

Electrical parts list of the FC-72 board is not shown.
pages 6-9 to 6-16 are not shown.

Ref. No.	Part No.	Description			Remarks
	A-7074-446-A	FU-139 BOARD, COMPLETE			
		**********			
					(Ref.No.;4000Series)
		< CAPACITOR >			
C001	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
		< CONNECTOR >			
* CN001	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
* CN002	1-580-057-11	PIN, CONNECTOR (SMD) 4P			
CN003	1-770-622-21	PIN, CONNECTOR 5P			
CN004	1-770-629-21	PIN, CONNECTOR 12P			
		< DIODE >			
D001	8-719-158-49	DIODE MA8120-TX			
D002	8-719-027-76	DIODE 1SS357-TPH3			
D003	8-719-045-87	DIODE MA4Z082WA-(TX).SO			
		< FUSE >			
⚠F001	1-576-406-21	FUSE, MICRO (1.4A/32V)(1608)			
⚠F002	1-576-406-21	FUSE, MICRO (1.4A/32V)(1608)			
⚠F003	1-576-406-21	FUSE, MICRO (1.4A/32V)(1608)			
⚠F004	1-576-406-21	FUSE, MICRO (1.4A/32V)(1608)			
⚠F005	1-576-406-21	FUSE, MICRO (1.4A/32V)(1608)			
		< FERRITE BEAD >			
FB001	1-414-228-11	INDUCTOR CHIP 0UH			
FB002	1-414-228-11	INDUCTOR CHIP 0UH			
FB003	1-414-228-11	INDUCTOR CHIP 0UH			
		< LINE FILTER >			
LF001	1-411-957-11	FILTER, COMMON MODE			
		< TRANSISTOR >			
Q001	8-729-046-77	TRANSISTOR	SI4963DY-T1		
Q001	8-729-051-49	TRANSISTOR	TPC8305(TE12L)		
Q002	8-729-804-41	TRANSISTOR	2SB1122-ST-TD		
Q003	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q004	8-729-047-68	TRANSISTOR	SSM3K03FE(TPL3)		
Q005	8-729-047-68	TRANSISTOR	SSM3K03FE(TPL3)		
		< RESISTOR >			
R001	1-216-821-11	METAL CHIP	1K	5%	1/16W
R002	1-216-853-11	METAL CHIP	470K	5%	1/16W
R004	1-216-821-11	METAL CHIP	1K	5%	1/16W
R005	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R006	1-216-857-11	METAL CHIP	1M	5%	1/16W
R008	1-216-864-11	METAL CHIP	0	5%	1/16W
R019	1-216-841-11	METAL CHIP	47K	5%	1/16W
R020	1-216-150-91	RES-CHIP	10	5%	1/8W
R021	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remarks
	A-7074-451-A	MA-379 BOARD, COMPLETE			
		**********			
					(Ref.No.;8000Series)
		< CAPACITOR >			
C303	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C304	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C305	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C306	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C307	1-119-749-11	TANTAL. CHIP	33uF	20%	4V
		< CONNECTOR >			
CN301	1-766-340-21	CONNECTOR, FFC/FPC 10P			
CN303	1-766-336-21	CONNECTOR, FFC/FPC 6P			
CN305	1-784-342-21	HOUSING, CONNECTOR 2P			
CN306	1-766-335-21	CONNECTOR, FFC/FPC 5P			
		< IC >			
IC301	8-759-339-63	IC NJM2118V-TE2			
		< COIL >			
L301	1-414-754-11	INDUCTOR	10uH		
		< RESISTOR >			
R301	1-216-820-11	METAL CHIP	820	5%	1/16W
R302	1-216-812-11	METAL CHIP	180	5%	1/16W
R303	1-216-809-11	METAL CHIP	100	5%	1/16W
R304	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R306	1-216-864-11	METAL CHIP	0	5%	1/16W
	A-7074-447-A	PK-49(CASI) BOARD, COMPLETE (CA)			
		**********			
	A-7074-448-A	PK-49(SHAP) BOARD, COMPLETE (SH)			
		**********			
					(Ref.No.;5000Series)
		< BATTERY >			
BT701	1-528-999-11	BATTERY, LITHIUM SECONDARY			
		< CAPACITOR >			
C705	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C706	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C710	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C711	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C801	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C802	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C803	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C804	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C805	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C806	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C807	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C808	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C810	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C811	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C812	1-104-851-11	TANTAL. CHIP	10uF	20%	10V

Note :
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Replace only with part number specified.

Note :
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Ne les remplacer que par une pièce portant le numéro spécifié.

PK-49

Ref. No.	Part No.	Description			Remarks
C813	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C814	1-165-112-11	CERAMIC CHIP	0.33uF	20%	10V
C815	1-165-112-11	CERAMIC CHIP	0.33uF	20%	10V
C816	1-165-112-11	CERAMIC CHIP	0.33uF	20%	10V
C851	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C852	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C853	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C854	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C855	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C856	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C857	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C858	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C859	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C861	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C862	1-115-156-11	CERAMIC CHIP	1uF		10V
C863	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C864	1-164-657-11	CERAMIC CHIP	0.015uF	10%	50V
C865	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
⚠C866	1-131-959-91	CERAMIC CHIP	12PF	10%	3KV
C901	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V (CA)
C902	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C903	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V (CA)
C903	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V (SH)
C904	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C905	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C906	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C907	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C908	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C909	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C911	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C912	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C913	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C914	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V (SH)
C915	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (SH)
C916	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C917	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C918	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C919	1-164-156-11	CERAMIC CHIP	0.1uF		25V (CA)
		< CONNECTOR >			
CN701	1-778-637-21	CONNECTOR, FFC/FPC (ZIF) 50P			
CN702	1-784-342-11	HOUSING, CONNECTOR 2P			
CN781	1-691-344-11	CONNECTOR, FFC/FPC (ZIF) 6P			
CN851	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
CN901	1-691-362-11	CONNECTOR, FFC/FPC (ZIF) 24P			
		< DIODE >			
D701	8-719-061-81	DIODE TLYU1002 (TPX1,SONY)			
D702	8-719-061-81	DIODE TLYU1002 (TPX1,SONY)			
D703	8-719-064-05	DIODE TLGU1002 (TPX1,SONY)			
D782	8-719-045-87	DIODE MA4Z082WA-(TX).SO			
D783	8-719-045-87	DIODE MA4Z082WA-(TX).SO			

Ref. No.	Part No.	Description	Remarks
D784	8-719-073-01	DIODE MA111-(K8).S0	
D785	8-719-073-01	DIODE MA111-(K8).S0	
D786	8-719-045-87	DIODE MA4Z082WA-(TX).SO	
D787	8-719-045-87	DIODE MA4Z082WA-(TX).SO	
D788	8-719-045-87	DIODE MA4Z082WA-(TX).SO	
D789	8-719-045-87	DIODE MA4Z082WA-(TX).SO	
D790	8-719-045-87	DIODE MA4Z082WA-(TX).SO	
D853	8-719-073-01	DIODE MA111-(K8).S0	
D854	8-719-062-44	DIODE PG1112H-TR	
D902	8-713-102-80	DIODE 1T369-01-T8A	
D903	8-719-976-96	DIODE MA8047-H-TX	
		< FERRITE BEAD >	
FB781	1-414-633-22	INDUCTOR CHIP 0UH	
FB782	1-414-633-22	INDUCTOR CHIP 0UH	
FB783	1-414-633-22	INDUCTOR CHIP 0UH	
FB784	1-414-633-22	INDUCTOR CHIP 0UH	
FB785	1-414-633-22	INDUCTOR CHIP 0UH	
FB786	1-414-633-22	INDUCTOR CHIP 0UH	
FB787	1-414-633-22	INDUCTOR CHIP 0UH	
FB788	1-414-228-11	INDUCTOR CHIP 0UH	
FB789	1-500-284-21	INDUCTOR CHIP 0UH	
FB790	1-500-284-21	INDUCTOR CHIP 0UH	
FB791	1-414-633-22	INDUCTOR CHIP 0UH	
FB801	1-414-229-11	INDUCTOR CHIP 0UH	
FB802	1-414-229-11	INDUCTOR CHIP 0UH	
FB803	1-414-229-11	INDUCTOR CHIP 0UH	
		< IC >	
IC702	8-759-572-54	IC TA6009FN(EL)	
IC801	8-759-364-05	IC MB40D001PFV-G-BND-ER	
IC802	8-759-539-27	IC IR3Y37A4	
IC803	8-759-196-97	IC TC7SH32FU-TE85R	
IC851	8-759-521-35	IC TL5001CDR	
IC852	8-759-710-82	IC NJM2406F-TE2	
IC901	8-759-524-61	IC CM7018L3-T4 (CA)	
IC901	8-759-587-61	IC LZ9GH234 (SH)	
IC902	8-759-327-01	IC NJM062V(TE2)	
		< JACK >	
J781	1-695-514-31	JACK (SMALL TYPE) 1P (AUDIO(MONO)VIDEO OUT)	
		< COIL >	
L702	1-414-756-11	INDUCTOR 47uH	
L801	1-414-757-11	INDUCTOR 100uH	
L802	1-414-754-11	INDUCTOR 10uH	
L851	1-414-753-91	INDUCTOR 4.7uH	
L852	1-424-674-11	INDUCTOR 22uH	
L853	1-419-387-21	INDUCTOR 100uH	
L901	1-414-754-11	INDUCTOR 10uH	
L902	1-414-754-11	INDUCTOR 10uH	
L903	1-414-754-11	INDUCTOR 10uH	
L904	1-414-754-11	INDUCTOR 10uH (CA)	
L905	1-412-949-21	INDUCTOR 6.8uH	

Note :
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Replace only with part number specified.

Note :
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Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
		< TRANSISTOR >			
Q851	8-729-042-72	TRANSISTOR	UN9214J-(K8).SO		
Q852	8-729-042-59	TRANSISTOR	UN9112J-(K8).SO		
Q853	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q854	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q855	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q856	8-729-823-84	TRANSISTOR	FP102-TL		
Q857	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q858	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q859	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q860	8-729-039-43	TRANSISTOR	FP216-TL		
Q861	8-729-042-59	TRANSISTOR	UN9112J-(K8).SO		
Q901	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q902	8-729-037-53	TRANSISTOR	2SB1462J-QR(K8).SO		
Q903	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q904	8-729-037-53	TRANSISTOR	2SB1462J-QR(K8).SO		
		< RESISTOR >			
R703	1-216-864-11	METAL CHIP	0	5%	1/16W
R708	1-216-819-11	METAL CHIP	680	5%	1/16W
R712	1-216-814-11	METAL CHIP	270	5%	1/16W
R713	1-218-872-11	METAL CHIP	11K	0.5%	1/16W
R714	1-216-819-11	METAL CHIP	680	5%	1/16W
R715	1-216-847-11	METAL CHIP	150K	5%	1/16W
R716	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R717	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R718	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R719	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R720	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R721	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R722	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R723	1-216-839-11	METAL CHIP	33K	5%	1/16W
R724	1-216-833-91	RES-CHIP	10K	5%	1/16W
R729	1-216-864-11	METAL CHIP	0	5%	1/16W
R782	1-216-821-11	METAL CHIP	1K	5%	1/16W
R787	1-216-821-11	METAL CHIP	1K	5%	1/16W
R803	1-216-864-11	METAL CHIP	0	5%	1/16W
R808	1-216-837-11	METAL CHIP	22K	5%	1/16W
R809	1-216-834-11	METAL CHIP	12K	5%	1/16W
R812	1-216-841-11	METAL CHIP	47K	5%	1/16W
R813	1-216-835-11	METAL CHIP	15K	5%	1/16W
R814	1-216-839-11	METAL CHIP	33K	5%	1/16W
R817	1-216-830-11	METAL CHIP	5.6K	5%	1/16W (CA)
R817	1-216-834-11	METAL CHIP	12K	5%	1/16W (SH)
R818	1-216-840-11	METAL CHIP	39K	5%	1/16W
R820	1-216-845-11	METAL CHIP	100K	5%	1/16W
R821	1-216-833-91	RES-CHIP	10K	5%	1/16W
R853	1-218-867-11	METAL CHIP	6.8K	0.5%	1/16W
R854	1-218-881-11	METAL CHIP	27K	0.5%	1/16W
R855	1-218-897-11	METAL CHIP	120K	0.5%	1/16W
R856	1-216-818-11	METAL CHIP	560	5%	1/16W
R857	1-216-837-11	METAL CHIP	22K	5%	1/16W
R858	1-216-818-11	METAL CHIP	560	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R859	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R860	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R861	1-218-853-11	METAL CHIP	1.8K	0.5%	1/16W
R862	1-218-859-11	METAL CHIP	3.3K	0.5%	1/16W
R863	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R864	1-216-841-11	METAL CHIP	47K	5%	1/16W
R865	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R866	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R867	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R868	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R869	1-216-845-11	METAL CHIP	100K	5%	1/16W
R870	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R871	1-216-837-11	METAL CHIP	22K	5%	1/16W
R872	1-216-817-11	METAL CHIP	470	5%	1/16W
R873	1-216-810-11	METAL CHIP	120	5%	1/16W
R874	1-216-295-91	SHORT	0		
R901	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R902	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R903	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R904	1-216-841-11	METAL CHIP	47K	5%	1/16W
R905	1-216-841-11	METAL CHIP	47K	5%	1/16W
R908	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R911	1-216-846-11	METAL CHIP	120K	5%	1/16W
R912	1-216-855-11	METAL CHIP	680K	5%	1/16W
R913	1-216-844-11	METAL CHIP	82K	5%	1/16W (CA)
R913	1-216-845-11	METAL CHIP	100K	5%	1/16W (SH)
R916	1-216-833-91	RES-CHIP	10K	5%	1/16W
R917	1-216-857-11	METAL CHIP	1M	5%	1/16W (SH)
R918	1-216-864-11	METAL CHIP	0	5%	1/16W
R919	1-216-857-11	METAL CHIP	1M	5%	1/16W
R920	1-216-837-11	METAL CHIP	22K	5%	1/16W
R921	1-216-843-11	METAL CHIP	68K	5%	1/16W
R922	1-216-843-11	METAL CHIP	68K	5%	1/16W
R923	1-216-841-11	METAL CHIP	47K	5%	1/16W
R925	1-218-887-11	METAL CHIP	47K	0.5%	1/16W (CA)
R925	1-218-891-11	METAL CHIP	68K	0.5%	1/16W (SH)
R927	1-218-885-11	METAL CHIP	39K	0.5%	1/16W (CA)
R927	1-218-883-11	METAL CHIP	33K	0.5%	1/16W (SH)
R928	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R929	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R930	1-216-864-11	METAL CHIP	0	5%	1/16W
R931	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R932	1-216-845-11	METAL CHIP	100K	5%	1/16W
R933	1-216-839-11	METAL CHIP	33K	5%	1/16W
R934	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)

Ref. No.	Part No.	Description			Remarks
R935	1-216-845-11	METAL CHIP	100K	5%	1/16W
R936	1-216-845-11	METAL CHIP	100K	5%	1/16W
R939	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R940	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R941	1-216-845-11	METAL CHIP	100K	5%	1/16W
R942	1-216-839-11	METAL CHIP	33K	5%	1/16W
R944	1-218-883-11	METAL CHIP	33K	0.5%	1/16W (SH)
R945	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R945	1-218-879-11	METAL CHIP	22K	0.5%	1/16W (SH)
R946	1-218-883-11	METAL CHIP	33K	0.5%	1/16W (SH)
R947	1-218-879-11	METAL CHIP	22K	0.5%	1/16W (SH)
R948	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R949	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R950	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R951	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R952	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R953	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R954	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R956	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R957	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R958	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R959	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R960	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R961	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R962	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R963	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R964	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R966	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA)
R967	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R968	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R969	1-216-864-11	METAL CHIP	0	5%	1/16W (SH)
R970	1-216-864-11	METAL CHIP	0	5%	1/16W (CA)
R971	1-216-805-11	METAL CHIP	47	5%	1/16W (SH)
R972	1-216-805-11	METAL CHIP	47	5%	1/16W (SH)
R973	1-216-805-11	METAL CHIP	47	5%	1/16W (SH)
R974	1-216-805-11	METAL CHIP	47	5%	1/16W (CA)
R975	1-216-805-11	METAL CHIP	47	5%	1/16W (CA)
R976	1-216-805-11	METAL CHIP	47	5%	1/16W (CA)
R977	1-216-841-11	METAL CHIP	47K	5%	1/16W (CA)
R977	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (SH)
		< SWITCH >			
S701	1-771-688-21	SWITCH, TACTILE (MENU)			
S702	1-771-138-61	SWITCH, KEY BOARD (DISPLAY)			
S703	1-572-467-21	SWITCH, PUSH (1 KEY) (POWER)			
S704	1-771-138-61	SWITCH, KEY BOARD (VOL+)			
S705	1-771-138-61	SWITCH, KEY BOARD (FLASH)			
S706	1-771-138-61	SWITCH, KEY BOARD (VOL-)			
S707	1-771-331-21	SWITCH, PUSH (1 KEY) (PLAY)			
S708	1-771-138-61	SWITCH, KEY BOARD (LCD ON/OFF)			
S709	1-771-331-51	SWITCH, PUSH (1 KEY) (MOVIE)			
		< SENSOR >			
SE701	1-801-868-41	SENSOR, SHOCK			
		< TRANSFORMER >			
⚠T851	1-435-227-11	TRANSFORMER, INVERTER			
	A-7074-453-A	VF-143 BOARD, COMPLETE			
		**********			
					(Ref.No.;6000Series)
		< CAPACITOR >			
C501	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C502	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C503	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C504	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C505	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C506	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C507	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C508	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C509	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C510	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C511	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C512	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C513	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C514	1-127-760-91	CERAMIC CHIP	4.7uF	10%	6.3V
C515	1-127-760-91	CERAMIC CHIP	4.7uF	10%	6.3V
C516	1-127-760-91	CERAMIC CHIP	4.7uF	10%	6.3V
C517	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C518	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C519	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C520	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C521	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C601	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C602	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C603	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C604	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

Note :
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Replace only with part number specified.

Note :
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Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
C605	1-104-916-11	TANTAL. CHIP	6.8uF	20%	20V
C606	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C608	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C609	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C610	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C611	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C612	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C613	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C614	1-164-878-11	CERAMIC CHIP	150PF	5%	16V
C615	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C616	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C617	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C618	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C619	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C620	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C621	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C622	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C623	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C624	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C625	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C626	1-113-642-11	TANTAL. CHIP	47uF	20%	10V
C628	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C629	1-164-505-11	CERAMIC CHIP	2.2uF		16V
⚠C630	1-115-464-91	CERAMIC CHIP	0.0022uF	10%	630V
		< CONNECTOR >			
CN501	1-784-421-11	CONNECTOR, FFC/FPC (ZIF) 27P			
CN601	1-750-340-21	CONNECTOR, FFC/EPC (ZIF) 16P			
		< DIODE >			
D501	8-719-060-95	DIODE CL-200IR-X-TSL-BC			
D601	8-719-043-70	DIODE MA6S121-(TX)			
D602	8-713-102-80	DIODE 1T369-01-T8A			
D603	8-719-033-14	DIODE CL-170PG-CD-T			
D604	8-719-056-49	DIODE 1SS370(TE85L)			
		< IC >			
IC502	8-759-546-65	IC CXA8115AR-T4			
IC503	8-759-364-05	IC M62376GP-65AD			
IC504	8-759-075-66	IC TA75S01F(TE85R)			
IC601	8-759-097-75	IC MB3789PFV-G-BND-ER			
IC602	8-759-198-34	IC TA75S558F(TE85R)			
IC603	8-752-392-33	IC CXD2458AR-T4			
IC604	8-759-242-78	IC TC7W02FU(TE12R)			
		< COIL >			
L501	1-414-771-91	INDUCTOR CHIP	10uH		
L502	1-414-771-91	INDUCTOR CHIP	10uH		
L503	1-414-755-11	INDUCTOR	22uH		
L504	1-414-771-91	INDUCTOR CHIP	10uH		
L601	1-412-033-11	INDUCTOR CHIP	220uH		
L602	1-414-756-11	INDUCTOR	47uH		
L603	1-412-946-11	INDUCTOR	3.9uH		
L604	1-412-031-11	INDUCTOR CHIP	47uH		
L605	1-412-029-11	INDUCTOR CHIP	10uH		
		< FLUORESCENT INDICATOR >			
⚠ND601	1-517-933-11	FLUORESCENT TUBE (0.44)			

Ref. No.	Part No.	Description			Remarks
		< TRANSISTOR >			
Q501	8-729-040-26	TRANSISTOR	CPT-182S-C-TSL-CD		
Q502	8-729-049-25	TRANSISTOR	2SC5376F-B(TPL3)		
Q503	8-729-822-05	TRANSISTOR	2SD1622-ST-TD		
Q601	8-729-013-72	TRANSISTOR	RN2105-TE85L		
Q602	8-729-037-61	TRANSISTOR	UN9113J-(K8).SO		
Q603	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q604	8-729-427-72	TRANSISTOR	XP4501-TXE		
Q605	8-729-039-24	TRANSISTOR	FX216-TL1		
		< RESISTOR >			
R501	1-218-969-11	RES-CHIP	22K	5%	1/16W
R502	1-218-969-11	RES-CHIP	22K	5%	1/16W
R503	1-216-150-91	RES-CHIP	10	5%	1/8W
R504	1-218-977-11	RES-CHIP	100K	5%	1/16W
R505	1-216-019-00	METAL CHIP	56	5%	1/10W
R507	1-218-971-11	RES-CHIP	33K	5%	1/16W
R508	1-218-971-11	RES-CHIP	33K	5%	1/16W
R510	1-218-990-11	SHORT	0		
R513	1-218-975-11	RES-CHIP	68K	5%	1/16W
R514	1-218-971-11	RES-CHIP	33K	5%	1/16W
R515	1-218-985-11	RES-CHIP	470K	5%	1/16W
R516	1-218-972-11	RES-CHIP	39K	5%	1/16W
R517	1-218-972-11	RES-CHIP	39K	5%	1/16W
R518	1-218-975-11	RES-CHIP	68K	5%	1/16W
R519	1-218-971-11	RES-CHIP	33K	5%	1/16W
R520	1-218-973-11	RES-CHIP	47K	5%	1/16W
R521	1-218-972-11	RES-CHIP	39K	5%	1/16W
R522	1-216-857-11	METAL CHIP	1M	5%	1/16W
R523	1-218-941-11	RES-CHIP	100	5%	1/16W
R524	1-218-941-11	RES-CHIP	100	5%	1/16W
R526	1-218-941-11	RES-CHIP	100	5%	1/16W
R530	1-218-972-11	RES-CHIP	39K	5%	1/16W
R531	1-218-990-11	SHORT	0		
R532	1-218-990-11	SHORT	0		
R533	1-218-968-11	RES-CHIP	18K	5%	1/16W
R534	1-218-969-11	RES-CHIP	22K	5%	1/16W
R601	1-218-975-11	RES-CHIP	68K	5%	1/16W
R602	1-208-941-11	METAL CHIP	180K	0.5%	1/16W
R603	1-218-974-11	RES-CHIP	56K	5%	1/16W
R604	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R605	1-218-975-11	RES-CHIP	68K	5%	1/16W
R606	1-218-982-11	RES-CHIP	270K	5%	1/16W
R607	1-218-973-11	RES-CHIP	47K	5%	1/16W
R608	1-218-974-11	RES-CHIP	56K	5%	1/16W
R609	1-218-965-11	RES-CHIP	10K	5%	1/16W
R610	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R611	1-218-969-11	RES-CHIP	22K	5%	1/16W
R612	1-218-983-11	RES-CHIP	330K	5%	1/16W
R613	1-218-980-11	RES-CHIP	180K	5%	1/16W
R614	1-218-985-11	RES-CHIP	470K	5%	1/16W
R615	1-218-970-11	RES-CHIP	27K	5%	1/16W
R616	1-218-979-11	RES-CHIP	150K	5%	1/16W
R617	1-218-982-11	RES-CHIP	270K	5%	1/16W
R618	1-218-971-11	RES-CHIP	33K	5%	1/16W
R620	1-218-989-11	RES-CHIP	1M	5%	1/16W

Note :
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Ref. No.	Part No.	Description			Remarks
R621	1-218-965-11	RES-CHIP	10K	5%	1/16W
R622	1-218-974-11	RES-CHIP	56K	5%	1/16W
R623	1-218-973-11	RES-CHIP	47K	5%	1/16W
R624	1-218-971-11	RES-CHIP	33K	5%	1/16W
R625	1-218-977-11	RES-CHIP	100K	5%	1/16W
R626	1-218-965-11	RES-CHIP	10K	5%	1/16W
R627	1-218-953-11	RES-CHIP	1K	5%	1/16W
R628	1-218-953-11	RES-CHIP	1K	5%	1/16W
R629	1-218-949-11	RES-CHIP	470	5%	1/16W
R630	1-218-969-11	RES-CHIP	22K	5%	1/16W
R632	1-218-990-11	SHORT	0		
R633	1-218-990-11	SHORT	0		
R636	1-216-839-11	METAL CHIP	33K	5%	1/16W
R637	1-216-809-11	METAL CHIP	100	5%	1/16W
R638	1-218-990-11	SHORT	0		
		< TRANSFORMER >			
⚠T601	1-435-225-21	TRANSFORMER, INVERTER			
	A-7074-449-A	VP-50 BOARD, COMPLETE			
		**********			
					(Ref.No.;3000Series)
		< CAPACITOR >			
C201	1-135-149-21	TANTAL CHIP	2.2MF	20%	10V
C202	1-135-149-21	TANTAL CHIP	2.2MF	20%	10V
C203	1-110-563-11	CERAMIC CHIP	68000PF	10%	16V
C204	1-110-563-11	CERAMIC CHIP	68000PF	10%	16V
C205	1-107-826-91	CERAMIC CHIP	100000PF	10%	16V
C206	1-162-964-11	CERAMIC CHIP	1000PF	10%	25V
C207	1-125-837-91	CERAMIC CHIP	1MF	10%	16V
C208	1-162-964-11	CERAMIC CHIP	1000PF	10%	25V
C209	1-125-891-11	CERAMIC CHIP	0.47MF	10%	10V
C210	1-125-891-11	CERAMIC CHIP	0.47MF	10%	10V
C211	1-104-851-11	TANTAL CHIP	10MF	20%	10V
C212	1-107-826-91	CERAMIC CHIP	100000PF	10%	16V
C213	1-135-210-11	TANTAL CHIP	4.7MF	20%	10V
C214	1-135-151-21	TANTAL CHIP	4.7MF	20%	10V
C215	1-135-259-11	TANTAL CHIP	10MF	20%	10V
C224	1-165-176-11	CERAMIC CHIP	47000PF	10%	25V
C225	1-107-727-91	CERAMIC CHIP	22000PF	10%	16V
C226	1-165-176-11	CERAMIC CHIP	47000PF	10%	25V
C227	1-162-967-11	CERAMIC CHIP	3300PF	10%	25V
C228	1-104-851-11	TANTAL CHIP	10MF	20%	10V
C229	1-162-967-11	CERAMIC CHIP	3300PF	10%	25V
C230	1-107-727-91	CERAMIC CHIP	22000PF	10%	16V
C231	1-104-851-11	TANTAL CHIP	10MF	20%	10V
C232	1-135-210-11	TANTAL CHIP	4.7MF	20%	10V
C233	1-162-964-11	CERAMIC CHIP	1000PF	10%	25V
C234	1-107-826-91	CERAMIC CHIP	100000PF	10%	16V
C235	1-107-726-91	CERAMIC CHIP	10000PF	10%	16V
C236	1-107-726-91	CERAMIC CHIP	10000PF	10%	16V
C237	1-135-181-21	TANTAL CHIP	4.7MF	20%	10V
C238	1-107-826-91	CERAMIC CHIP	100000PF	10%	16V

Ref. No.	Part No.	Description			Remarks
		< CONNECTOR >			
CN235	1-766-335-21	CONNECTOR, FFC/FPC 5P			
CN234	1-766-336-21	CONNECTOR, FFC/FPC 6P			
CN232	1-766-337-21	CONNECTOR, FFC/FPC 7P			
CN231	1-766-343-21	CONNECTOR, FFC/FPC 13P			
CN236	1-766-346-21	CONNECTOR, FFC/FPC 16P			
		< DIODE >			
D201	8-719-045-87	DIODE MA4Z082WA-(TX).SO			
		< FERRITE BEAD >			
FB201	1-414-228-11	INDUCTOR CHIP 0UH			
		< IC >			
IC209	8-752-900-84	IC CXP81120-047R-T6			
IC205	8-759-058-45	IC NJM3403AV (TE2)			
IC208	8-759-248-78	IC MB88102PFV-G-BND-ER			
IC201	8-759-359-49	IC NJM3414AV (TE2)			
IC202	8-759-359-49	IC NJM3414AV (TE2)			
IC204	8-759-444-87	IC NJM324V (TE2)			
IC206	8-759-478-92	IC TC7SET04FU (TE85R)			
IC207	8-759-478-92	IC TC7SET04FU (TE85R)			
IC203	8-759-823-51	IC LB1830M-TLM			
IC210	8-759-058-58	IC TC7S04FU (TE85R)			
		< COIL >			
L201	1-412-951-11	INDUCTOR 10UH			
L202	1-412-951-11	INDUCTOR 10UH			
L204	1-412-963-11	INDUCTOR 100UH			
L205	1-412-951-11	INDUCTOR 10UH			
L206	1-412-951-11	INDUCTOR 10UH			
L207	1-412-951-11	INDUCTOR 10UH			
		< TRANSISTOR >			
Q201	8-729-037-53	TRANSISTOR	2SB1462J-QR (K8).SO		
Q202	8-729-037-53	TRANSISTOR	2SB1462J-QR (K8).SO		
Q203	8-729-037-53	TRANSISTOR	2SB1462J-QR (K8).SO		
Q204	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q205	8-729-420-24	TRANSISTOR	2SB1218A-QRS-TX		
Q206	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q207	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q208	8-729-013-31	TRANSISTOR	2SA1588-OY-TE85L		
Q209	8-729-420-24	TRANSISTOR	2SB1218A-QRS-TX		
Q210	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q211	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
		< RESISTOR >			
R201	1-218-847-11	RES, CHIP	1K	5%	1/16W
R202	1-216-821-11	RES, CHIP	1K	5%	1/16W
R203	1-218-847-11	RES, CHIP	1K	5%	1/16W
R204	1-218-847-11	RES, CHIP	1K	5%	1/16W
R205	1-218-871-11	RES, CHIP	10K	5%	1/16W

Note :
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Note :
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Ref. No.	Part No.	Description			Remarks
R206	1-216-845-11	RES, CHIP	100K	5%	1/16W
R207	1-218-871-11	RES, CHIP	10K	5%	1/16W
R209	1-218-847-11	RES, CHIP	1K	5%	1/16W
R210	1-218-871-11	RES, CHIP	10K	5%	1/16W
R211	1-216-835-11	RES, CHIP	15K	5%	1/16W
R212	1-216-833-91	RES, CHIP	10K	5%	1/16W
R213	1-218-859-11	RES, CHIP	3.3K	5%	1/16W
R214	1-216-845-11	RES, CHIP	100K	5%	1/16W
R215	1-218-871-11	RES, CHIP	10K	5%	1/16W
R216	1-216-829-11	RES, CHIP	4.7K	5%	1/16W
R217	1-216-835-11	RES, CHIP	15K	5%	1/16W
R218	1-218-859-11	RES, CHIP	3.3K	5%	1/16W
R219	1-216-134-11	RES, CHIP	2.2	5%	1/16W
R220	1-216-845-11	RES, CHIP	100K	5%	1/16W
R221	1-216-841-11	RES, CHIP	47K	5%	1/16W
R222	1-216-841-11	RES, CHIP	47K	5%	1/16W
R223	1-216-833-91	RES, CHIP	10K	5%	1/16W
R224	1-216-841-11	RES, CHIP	47K	5%	1/16W
R225	1-216-864-11	CONDUCTOR, CHIP			
R227	1-218-887-11	RES, CHIP	47K	5%	1/16W
R228	1-218-887-11	RES, CHIP	47K	5%	1/16W
R231	1-218-903-11	RES, CHIP	220K	5%	1/16W
R232	1-218-903-11	RES, CHIP	220K	5%	1/16W
R233	1-218-895-11	RES, CHIP	100K	5%	1/16W
R234	1-218-895-11	RES, CHIP	100K	5%	1/16W
R235	1-218-895-11	RES, CHIP	100K	5%	1/16W
R238	1-216-837-11	RES, CHIP	22K	5%	1/16W
R239	1-216-837-11	RES, CHIP	22K	5%	1/16W
R240	1-216-837-11	RES, CHIP	22K	5%	1/16W
R241	1-216-837-11	RES, CHIP	22K	5%	1/16W
R242	1-216-837-11	RES, CHIP	22K	5%	1/16W
R243	1-218-895-11	RES, CHIP	100K	5%	1/16W
R244	1-216-837-11	RES, CHIP	22K	5%	1/16W
R245	1-216-833-91	RES, CHIP	10K	5%	1/16W
R246	1-216-841-11	RES, CHIP	47K	5%	1/16W
R247	1-216-837-11	RES, CHIP	22K	5%	1/16W
R248	1-216-833-91	RES, CHIP	10K	5%	1/16W
R249	1-216-821-11	RES, CHIP	1K	5%	1/16W
R250	1-216-833-91	RES, CHIP	10K	5%	1/16W
R251	1-216-841-11	RES, CHIP	47K	5%	1/16W
R252	1-216-841-11	RES, CHIP	47K	5%	1/16W
R253	1-216-841-11	RES, CHIP	47K	5%	1/16W
R254	1-216-814-11	RES, CHIP	270	5%	1/16W
R255	1-216-857-11	RES, CHIP	1M	5%	1/16W
R256	1-216-841-11	RES, CHIP	47K	5%	1/16W
R257	1-216-821-11	RES, CHIP	1K	5%	1/16W
R258	1-216-864-11	CONDUCTOR, CHIP			
R259	1-216-864-11	CONDUCTOR, CHIP			
R260	1-414-228-11	INDUCTOR CHIP	OUH (Note)		
R261	1-414-228-11	INDUCTOR CHIP	OUH (Note)		
R262	1-500-284-21	INDUCTOR CHIP	OUH (Note)		
R263	1-500-284-21	INDUCTOR CHIP	OUH (Note)		
R264	1-414-228-11	INDUCTOR CHIP	OUH (Note)		
R265	1-216-864-11	CONDUCTOR, CHIP			
		< VIBRATOR >			
X201	1-579-553-11	VIBRATOR (12MHz)			

Note : Inductors are mounted to the location where R260,R261, R262, R263, R264 are printed.

Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS	
		**********	
1	1-678-338-11	FP-175 FLEXIBLE BOARD	
4	1-772-563-11	DRIVE, FLOPPY DISK	
52	1-418-896-11	SWITCH BLOCK, CONTROL (ZOOM BLOCK 360) (ZOOM AND SHUTTER)	
56	1-678-328-11	FP-174 FLEXIBLE BOARD	
57	1-678-325-11	FP-171 FLEXIBLE BOARD	
⚠71	1-476-069-11	FLASH UNIT	
102	1-678-327-12	FP-173 FLEXIBLE BOARD	
159	1-960-552-11	HARNESS (FU-53)	
167	1-678-326-11	FP-172 FLEXIBLE BOARD	
176	1-960-553-11	HARNESS (FU-54)	
210	1-678-321-11	FP-166 FLEXIBLE BOARD	
211	1-678-324-11	FP-170 FLEXIBLE BOARD	
213	1-758-436-11	FILTER BLOCK, OPTICAL	
217	1-678-330-11	FP-177 FLEXIBLE BOARD	
219	1-678-322-11	FP-168 FLEXIBLE BOARD	
220	1-678-323-11	FP-169 FLEXIBLE BOARD	
224	1-418-068-11	MF BLOCK	
264	1-678-329-21	FP-176 FLEXIBLE BOARD (INCLUDING JACK)	
BT901	1-694-297-21	TERMINAL BOARD, BATTERY	
IC101	A-7031-092-A	CCD BLOCK ASSY (CCD imager)	
J901	1-794-045-31	CONNECTOR, DC-IN	
LCD901	1-803-858-21	INDICATOR MODULE LIQUID CRYST (SH)	
LCD901	1-803-860-21	INDICATOR MODULE LIQUID CRYST (CA)	
LCD902	8-753-026-77	LCX033AK-J	
MIC901	1-542-428-11	MICROPHONE UNIT	
⚠ND901	1-517-751-21	TUBE, FLUORESCENT,COLD CATHODE	
SP901	1-505-862-41	SPEAKER (2.0 CM)	
		ACCESSORIES	
		**********	
⚠	1-475-599-11	ADAPTOR, AC (US,CND,AEP,UK,AUS,E,HK,JE,J)	
⚠	1-475-599-71	ADAPTOR, AC (KR)	
⚠	1-475-599-81	ADAPTOR, AC (CN)	
⚠	1-569-007-11	ADAPTOR, CONVERSION (E,JE)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (E)	
⚠	1-696-819-11	COAD,POWER (AUS)	
⚠	1-769-608-11	CORD,POWER (AEP,E)	
⚠	1-776-985-11	CORD,POWER (KR)	
⚠	1-782-476-11	CORD,POWER (CN)	
⚠	1-783-374-11	CORD,POWER (UK,HK)	
	1-783-738-11	CORD,CONNECTION (A/V)(1.5m)	
⚠	1-790-073-11	CORD,POWER 2P (JE,J)	
⚠	1-790-107-22	CORD,POWER (US,CND)	
	3-055-746-01	SOFT (CS), BUNDLE (US)	
	3-060-716-01	SOFT (2000), BUNDLE (CND,AEP,UK,AUS,E,HK,CN,KR,JE)	

Be sure to read “Precautions Upon Replacing CCD Imager” on page 4-8 when changing the CCD imager.

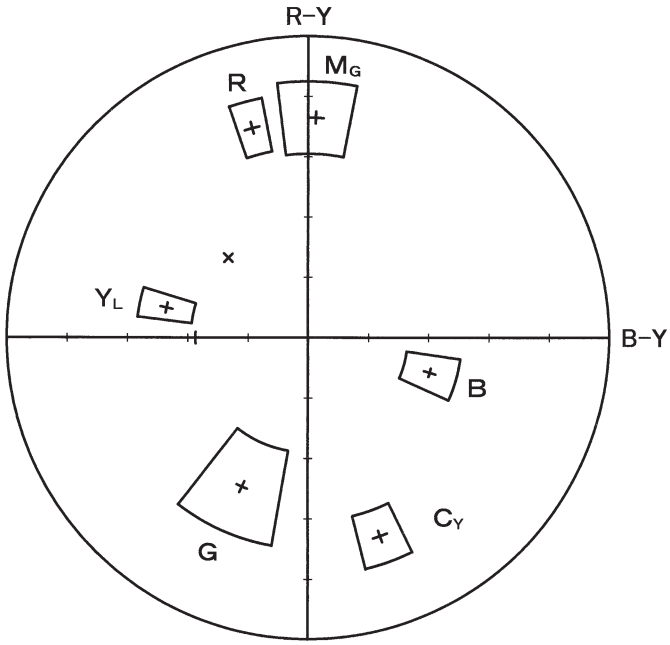
Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
	3-061-389-01	MANUAL, INSTRUCTION (JAPANESE)(J)	
	3-061-389-11	MANUAL, INSTRUCTION (ENGLISH)	(US,CND,AEP,UK,AUS,E,HK,CN,JE)
	3-061-389-21	MANUAL, INSTRUCTION (FRENCH/GERMAN)	(CND,AEP,JE)
	3-061-389-31	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE)	(AEP,E,JE)
	3-061-389-41	MANUAL, INSTRUCTION (ITALIAN/DUTCH)	(AEP)
	3-061-389-51	MANUAL, INSTRUCTION (TRADITIONAL CHINESE/SIMPLIFIED CHINESE)	(E,HK,CN,JE)
	3-061-389-61	MANUAL, INSTRUCTION (SWEDISH/RUSSIAN)	(AEP,JE)
	3-061-389-71	MANUAL, INSTRUCTION (ARABIC)(E)	
	3-061-389-81	MANUAL, INSTRUCTION (KOREAN)(KR,JE)	
	3-062-043-01	STRING, CAP	
	3-866-482-01	MANUAL, INSTRUCTION (JAPANESE)(J)	
	3-987-015-01	BELT(S), SHOULDER	
	A-7094-140-A	NP-F330 BATTERY PACK (US,CND)	
	A-7094-141-A	NP-F330 BATTERY PACK	(AEP,UK,AUS,E,HK,CN,KR,JE)
	A-7094-142-A	NP-F330 BATTERY PACK (J)	
	X-3950-691-1	CAP ASSY, LENS	

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.



Sony Corporation
Personal VIDEO Products Company

9-929-828-31

2000D1649-1
Printed in Japan © 2000.4
Published by Safety & Service Engineering Dept.

MVC-FD95

SONY

SERVICE MANUAL

Level 2

2000. 07

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Hong Kong Model
Chinese Model
Tourist Model
Korea Model
Japanese Model

SUPPLEMENT-1

File this supplement-1 with the Service Manual.
(PV00-003)

1. Addition of the LCD Unit.
2. CORRECTION

1. Type SA and type ST of LCD unit are added to the conventional type CA and type SH of LCD unit. In order to support the above-described types of LCD unit, the PK-53 board is changed to the PK-49 board using the new schematic diagram, new printed wiring board and new parts lists as shown below and as attached. All of the printed wiring boards other than the PK-53 board use the same schematic diagrams, the same printed wiring boards and the same parts lists. Only the name and part numbers are changed. So the schematic diagrams, the printed wiring boards and the patrs lists other than the PK-53 board are not shown in this supplement-1.

Following boards are changed.

TYPE CA, SH		TYPE SA, ST	
Board	Part No.	Board	Part No.
PK-49	A-7074-447-A (TYPE CA)	PK-53	A-7074-507-A (TYPE SA)
	A-7074-448-A (TYPE SH)		A-7074-510-A (TYPE ST)
AE-022	A-7074-452-A	AE-024	A-7074-509-A
CD-245	A-7074-444-A	CD-289	A-7074-503-A
CF-074	A-7074-450-A	CF-078	A-7074-506-A
FU-139	A-7074-446-A	FU-149	A-7074-505-A
MA-379	A-7074-451-A	MA-395	A-7074-508-A
VP-50	A-7074-449-A	VP-53	A-7074-504-A

• The FC-72 and VF-143 boards remain unchanged.
• For the method of identifying the types of LCD, refer to page 16 “1-5-1. LCD type check”.

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CORRECTION

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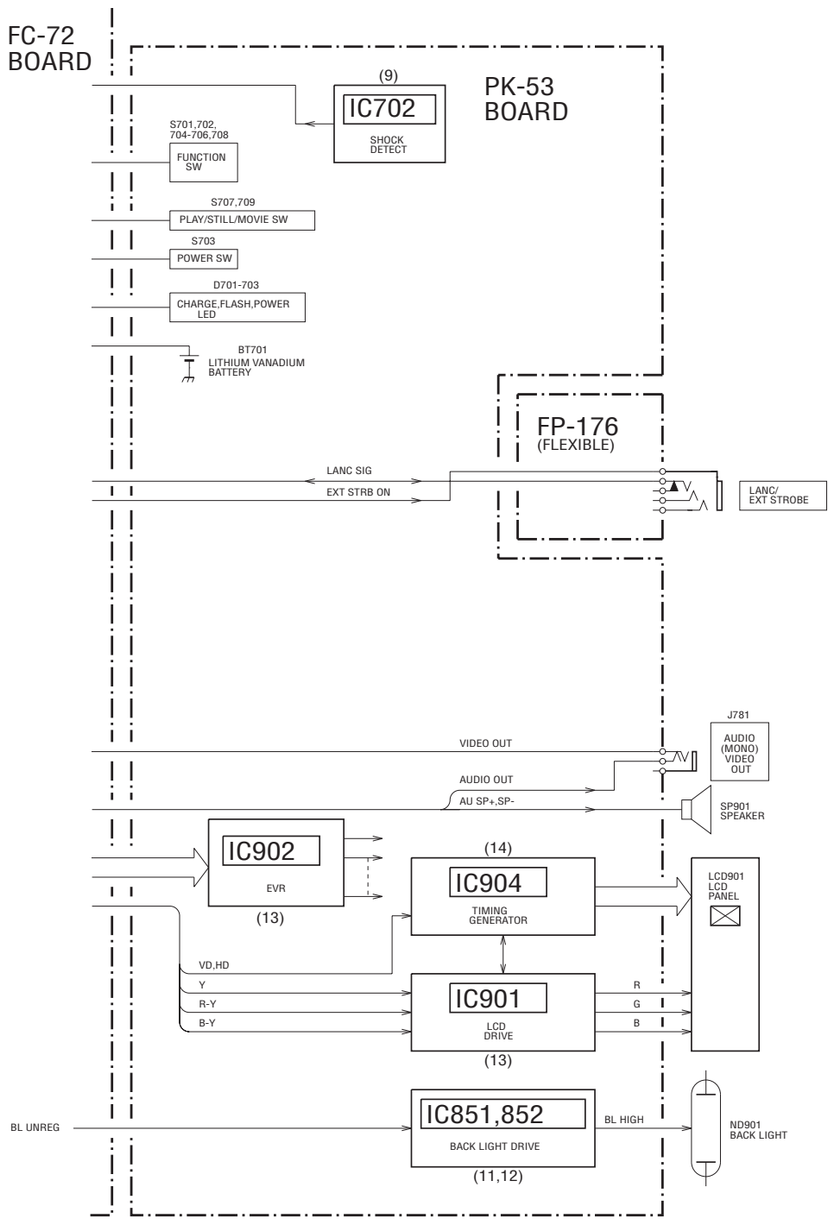
SECTION 3. BLOCK DIAGRAMS

3-2. OVERALL BLOCK DIAGRAM (2/2)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.

• Refer to page 3-4 for OVERALL BLOCK DIAGRAM of MVC-FD95 original SERVICE MANUAL.



Note: LCD Type Check

By measuring the resistor value between Pin ⑬ of CN803 and Pin ④ of CN803, the type of LCD can be discriminated.

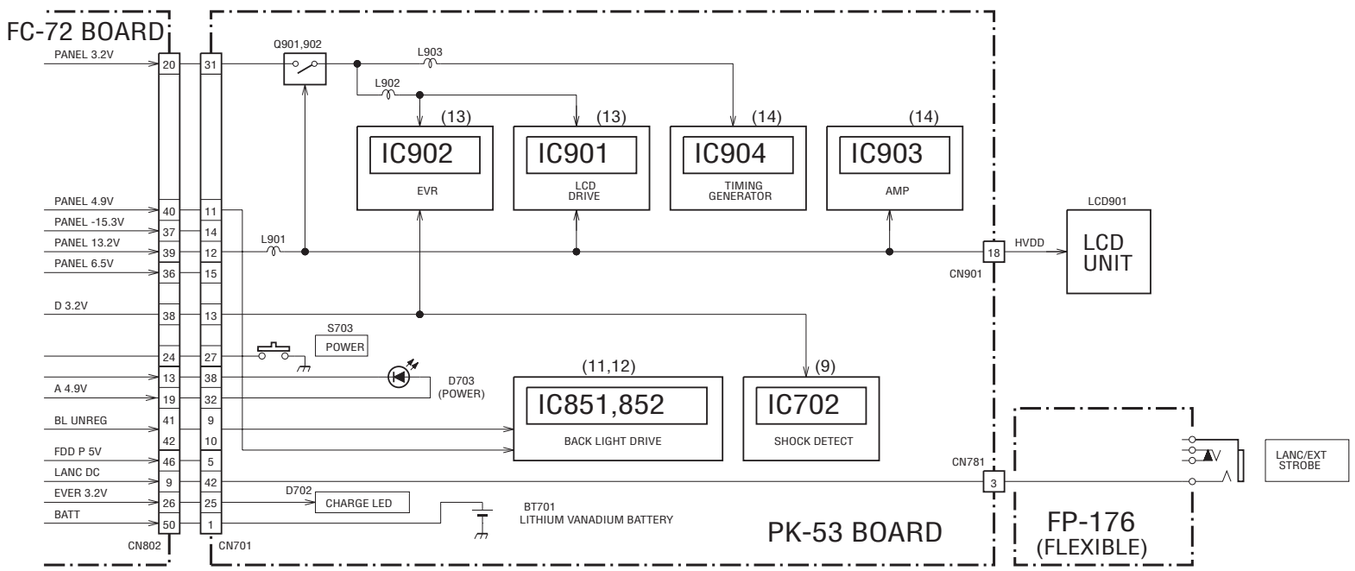
10 kΩ : Type SA (PK-53 board)

22 kΩ : Type ST (PK-53 board)

3-4. POWER BLOCK DIAGRAM (2/2)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.

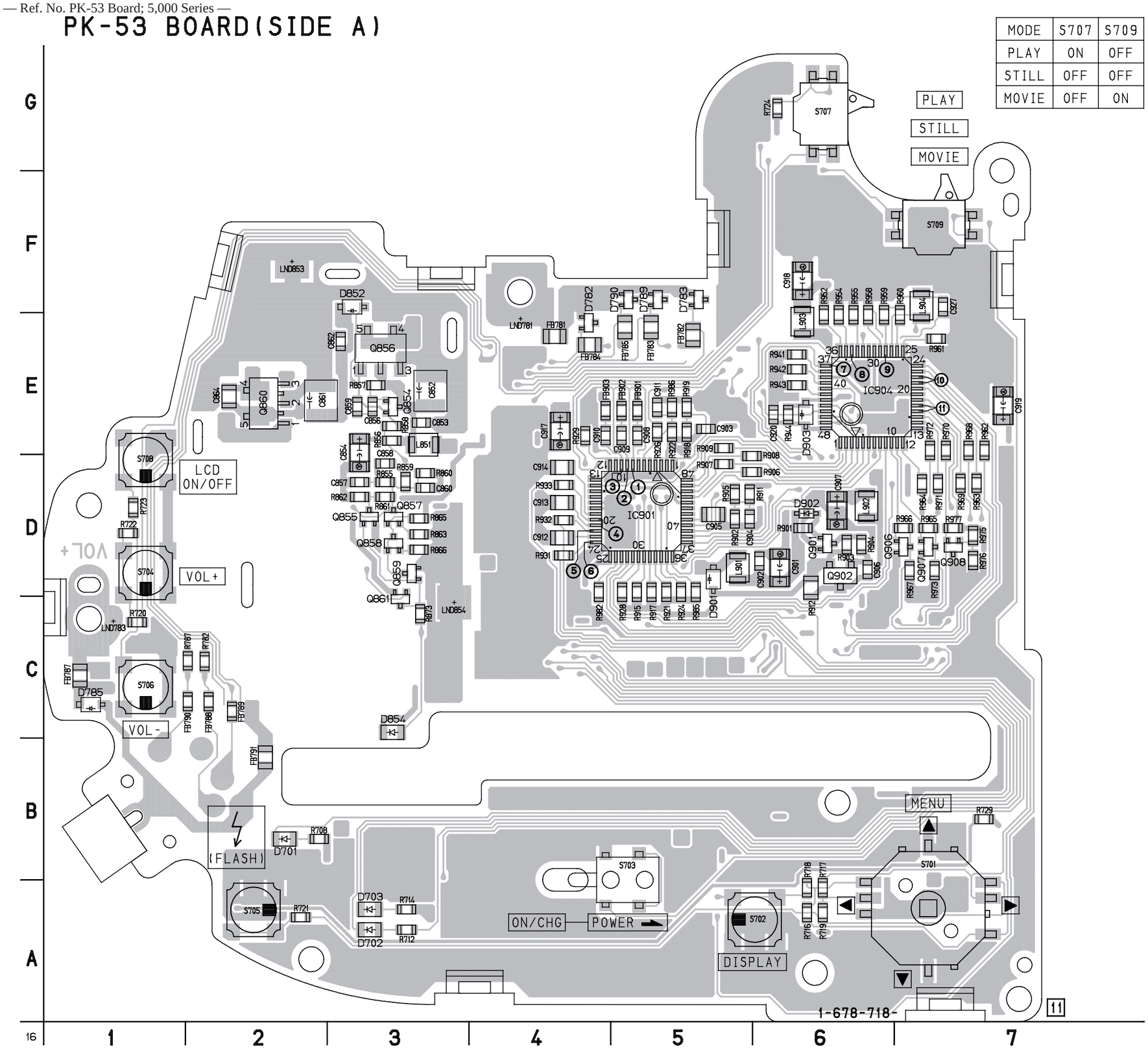
• Refer to page 3-8 for POWER BLOCK DIAGRAM of MVC-FD95 original SERVICE MANUAL.



SECTION 4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

PK-53 (AV OUT/KEY IN, BACK LIGHT, RGB, TG) PRINTED WIRING BOARD

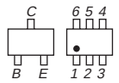
— Ref. No. PK-53 Board; 5,000 Series —



For printed wiring boards

- Refer to page 15 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.
- Chip parts

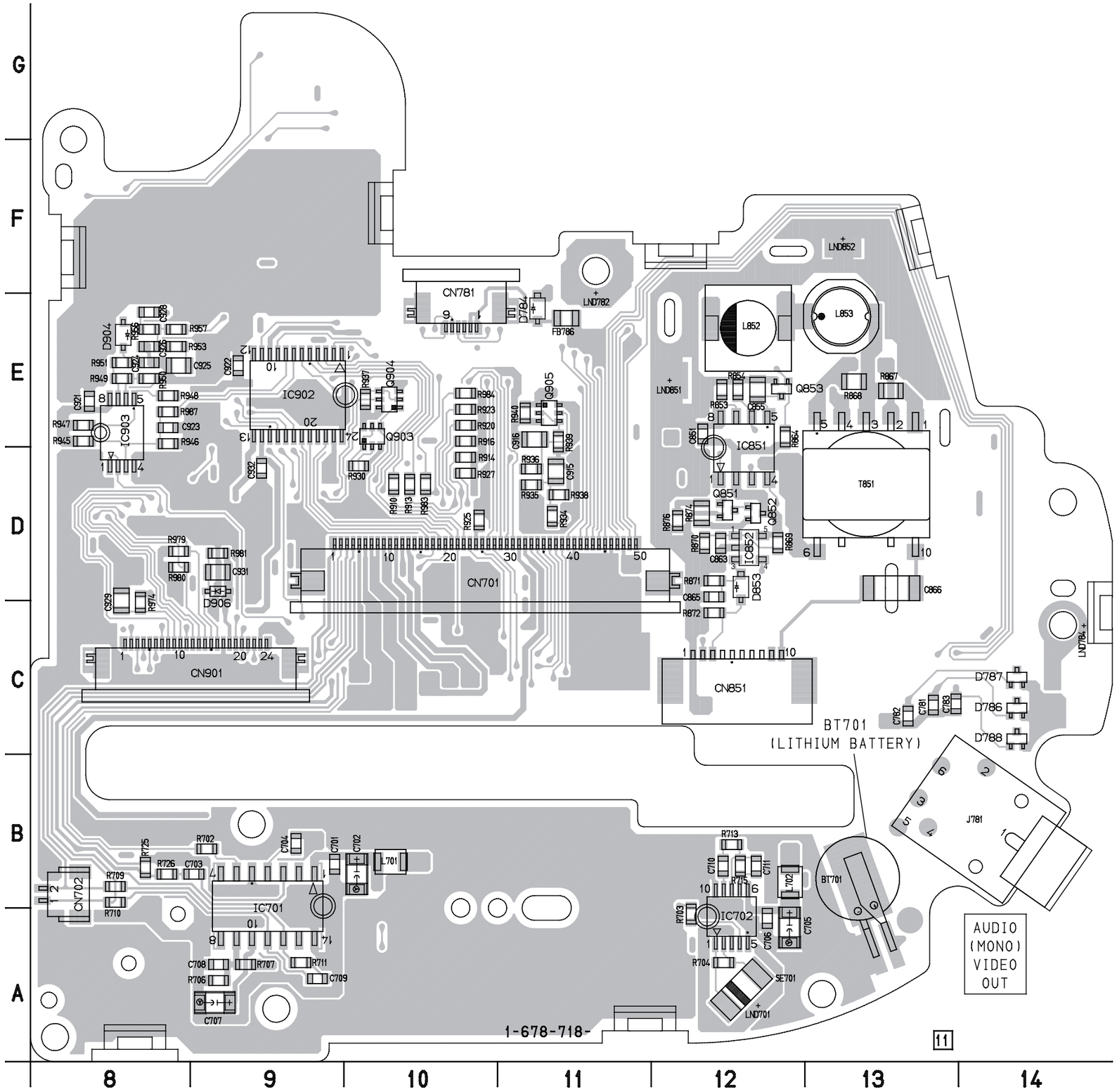
Transistor



Diode

There are few cases that the part printed on this diagram isn't mounted in this model.

PK-53 BOARD(SIDE B)



For schematic diagram

• Refer to page 5 for printed wiring board. ( ) : Page No. shown in ( ) indicates the page to refer on the original Service Manual.

PK-53 BOARD(1/3)

AV OUT/KEY IN(LK BLOCK)

-REF.NO.:5000 SERIES-

XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

CN701 50P

AV_JACK_IN 50
VIDEO_OUT 49
VIDEO_GND 48
AUDIO_OUT 47
AUDIO_GND 46
REG_GND 45
LANC_SIG 44
XLANC_HACK_IN 43
LANC_DC 42
EXT_STB_ON 41
REG_GND 40
MOVE/XSTILL 39
XPOWER_LED 38
XBATT_CHG_LED 37
SHOCK_SENS 36
KEY_AD2 35
KEY_AD1 34
XSTROBE_LED 33
A_4.9V 32
PANEL_3.2V 31
PANEL_B-Y 30
XCAM/PB_SW 29
PANEL_Y 28
XPWR_SW 27
PANEL_R-Y 26
EVER_3.2V 25
MAKER_RECOG 24
VG 23
HSY 22
PANEL_COM 21
XCS_LED_D/A 20
PANEL_V 19
HI_SO 18
HDO 17
XHI_SCK 16
PANEL_6.5V 15
PANEL_-15.3V 14
D_3.2V 13
PANEL_13.2V 12
PANEL_4.9V 11
BL_UNREG 10
BL_UNREG 9
REG_GND(UNREG_GND) 8
REG_GND(UNREG_GND) 7
FDD_GND 6
FDD_P_5V 5
AU_SP+ 4
AU_SP- 3
AU_SPON 2
AU_MIXOUT 1

REG_GND → (8) TO(3/3)

MAKER_RECOG
VG
HSY
PSIG
XCS_PANEL_D/A → (1) TO(3/3)
PANEL_V
HI_SO
HDO
XHI_SCK
PANEL_3.2V → (2) TO(3/3)
D_3.2V → (3) TO(3/3)
PANEL_13.2V → (4) TO(3/3)
PANEL_4.9V
BL_UNREG → (5) TO(2/3)
BL_GND

PANEL_B-Y
PANEL_Y
PANEL_R-Y → (6) TO(3/3)

TO FC-72 BOARD CN801 (THROUGH THE FP-165 FLEXIBLE)
(SEE PAGE 4-20)

CN702 2P
SP+ 1
SP- 2
SP901 SPEAKER
SP-149 HARNESS

BT701 (LITHIUM BATTRY)

R782 1k
R787 1k
C781 XX
C782 XX
C783 XX
FB788
FB789
FB790
FB791
J781 AUDIO (MONO) VIDEO OUT
D785 MA111-(K8).SO
D786 MA4Z082WA-(TX).SO
D787 MA4Z082WA-(TX).SO
D788 MA4Z082WA-(TX).SO
FB787
LND783 FLAME_GND
LND784 FLAME_GND

FB782
FB783
FB784
FB785
FB786
CN781 6P
6 LANC_SIG
5 XLANC_JACK_IN
4 EXT_STB_ON
3 LANC_DC
2 JACK_GND
1 JACK_GND
FP-176 FLEXIBLE
LANC/ EXT STROBE
Note:JACK is mouted in FP-176 FLEXIBLE

D782 MA4Z082WA-(TX).SO
D783 MA4Z082WA-(TX).SO
D789 MA4Z082WA-(TX).SO
D790 MA4Z082WA-(TX).SO
D784 MA111-(K8).SO
FB781
LND781 FLAME_GND
LND782 FLAME_GND

D702 TLYU1002(TPX1,SONY) CHARGE LED(AMBER)
D701 TLYU1002(TPX1,SONY) FLASH LED(AMBER)
D703 TLGU1002(TPX1,SONY) POWER LED(GREEN)
R712 270
R708 680
R714 680

R716 1800
R718 2700
S701 MENU
S702 DISPLAY
S704 VOLUME (+)
S706 VOLUME (-)
S708 LCD ON/OFF
R720 4700
R722 6800
R723 33k
COMMON
UP
SET
LEFT
RIGHT
DOWN
S705 (FLASH)
R721 4700
GURUPON SWITCH
R717 1800
R719 2700

S707 PLAY
S709 MOVIE
STILL
S703 POWER
R724 10k

LND701 DUMMY
SE701
IC702 SHOCK SENSOR AMP
IC702 TA6009FN(EL)
S1A
S1B
GUARD
OUT
GND
TRIP
AO
BI
BO
VCC
R729 0
L702 47uH 2520
C705 22u 6.3V
C706 0.22u B
R704 XX
R703 0
C710 0.47u B
R713 11k ±0.5%
R715 150k
C711 68p CH

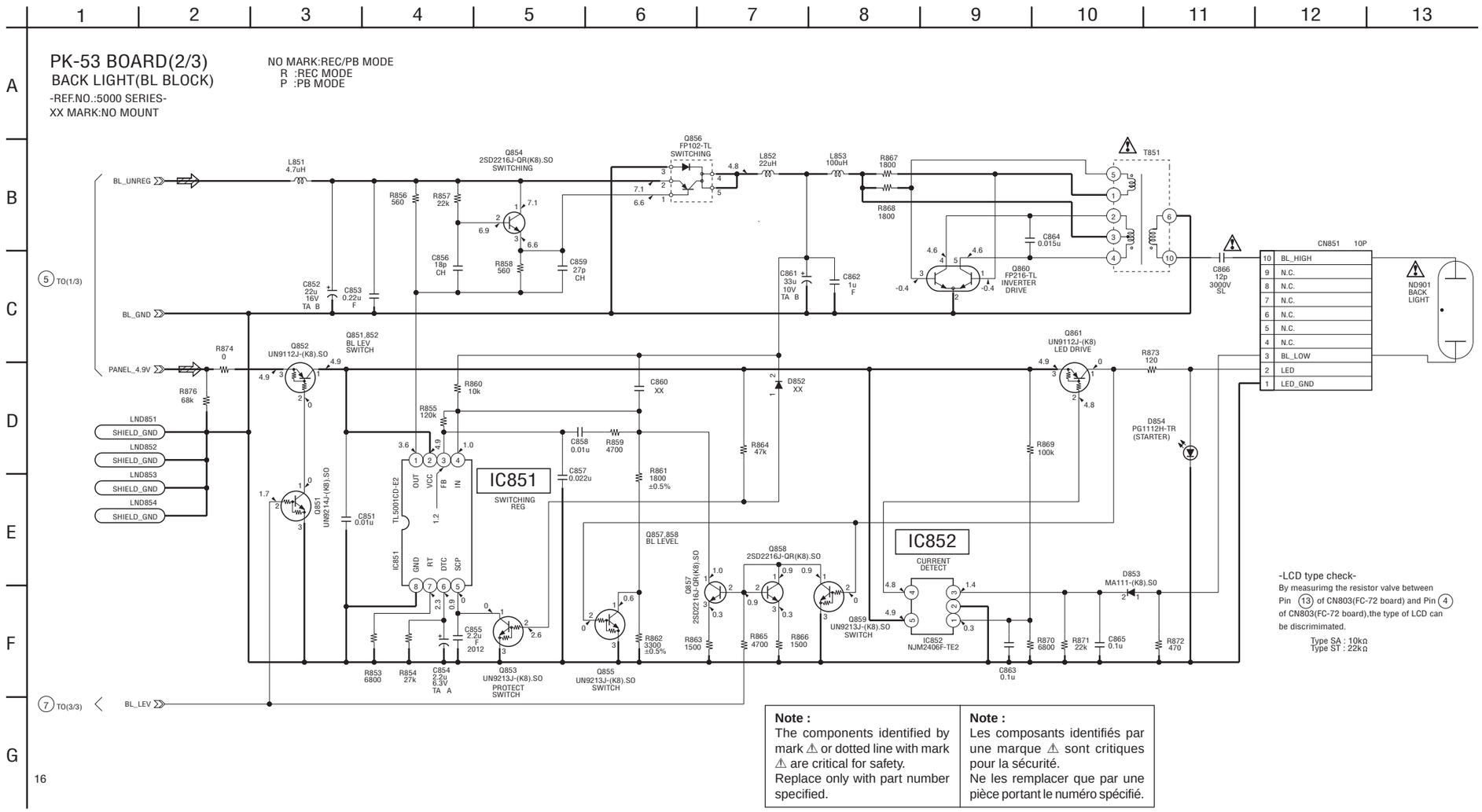
IC701 XX
VCC
NC
SP IN
AUX
AM
SUSPEND
NC
GND
NC
SPOUT-2
SPOUT-1
BIAS
EVR
NC
L701 XX
C701 XX B
C702 XX 10V
C703 XX B
C704 XX B
C707 XX 10V
C708 XX B
R725 XX
R726 XX
R702 XX
R709 XX
R710 XX
R706 XX
R711 XX
R707 XX
C709 XX

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	⇒		
PB	⇨	⇨	⇨	⇨

For schematic diagram

• Refer to page 5 for printed wiring board.



-LCD type check-

By measurimg the resistor valve between Pin (13) of CN803(FC-72 board) and Pin (4) of CN803(FC-72 board),the type of LCD can be discrimimated.

Type SA : 10kΩ
Type ST : 22kΩ

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

For schematic diagram

- Refer to page 5 for printed wiring board.
- Refer to page 15 for waveforms.

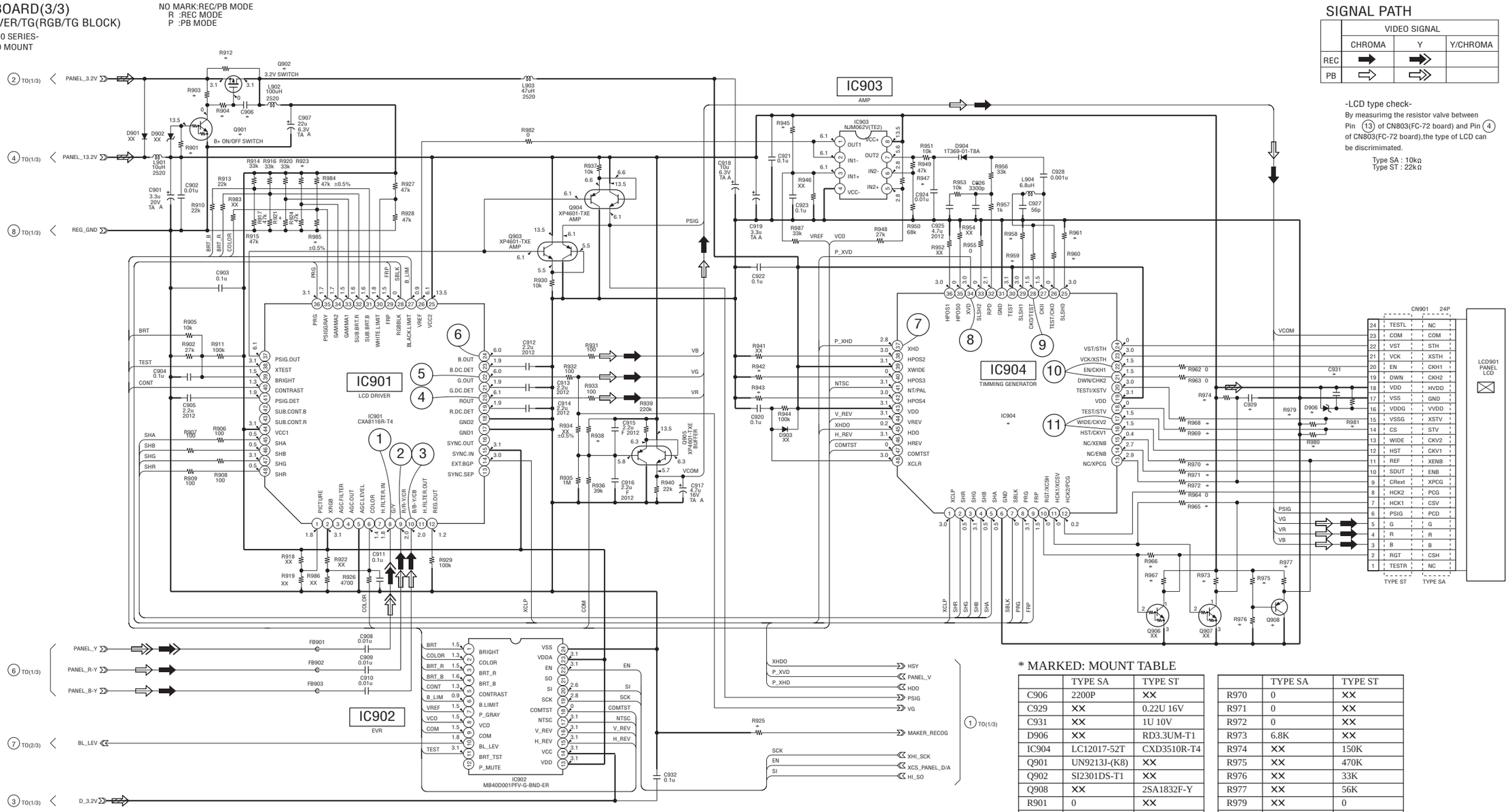
PK-53 BOARD(3/3)

RGB DRIVER/TG(RGB/TG BLOCK)

-REF.NO.:5000 SERIES-

XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE



SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	
PB	⇨	⇨	

-LCD type check-

By measurimg the resistor valve between Pin (13) of CN803(FC-72 board) and Pin (4) of CN803(FC-72 board),the type of LCD can be discrimimated.

Type SA : 10kΩ
Type ST : 22kΩ

* MARKED: MOUNT TABLE

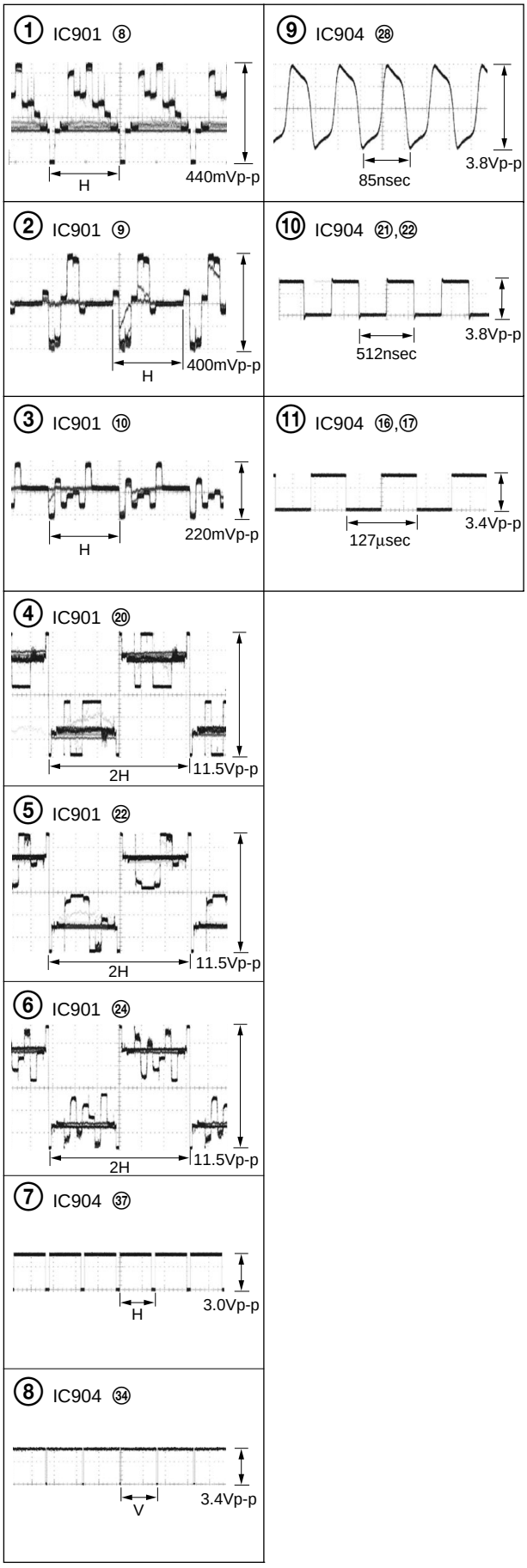
	TYPE SA	TYPE ST
C906	2200P	XX
C929	XX	0.22U 16V
C931	XX	1U 10V
D906	XX	RD3.3UM-T1
IC904	LC12017-52T	CXD3510R-T4
Q901	UN9213J-(K8)	XX
Q902	SI2301DS-T1	XX
Q908	XX	2SA1832F-Y
R901	0	XX
R903	100K	XX
R904	100K	XX
R912	XX	0
R921	47K	33K
R923	39K	33K
R925	10K	22K
R938	68K	47K
R942	0	XX
R943	XX	0
R945	56K	39K
R947	150K	330K
R958	XX	0
R959	0	XX
R960	XX	0
R961	XX	0
R965	XX	0
R966	XX	0
R967	6.8K	XX
R968	0	XX
R969	0	XX

	TYPE SA	TYPE ST
R970	0	XX
R971	0	XX
R972	0	XX
R973	6.8K	XX
R974	XX	150K
R975	XX	470K
R976	XX	33K
R977	XX	56K
R979	XX	0
R980	XX	0
R981	0	XX
R985	82K	47K

RGB DRIVE/TG
PK-53 (3/3)

WAVEFORMS

PK-53 BOARD
REC/PB



PARTS LOCATION

PK-53 BOARD (SIDE A)

C852	E-3	FB781	E-4	R717	A-6	R929	E-4
C853	E-3	FB782	E-5	R718	A-6	R931	E-6
C854	E-3	FB783	E-5	R719	A-6	R932	D-4
C856	E-3	FB784	E-4	R720	C-1	R941	E-6
C857	D-3	FB785	E-5	R721	A-2	R942	E-6
C858	D-3	FB787	C-1	R722	D-1	R943	E-6
C859	E-3	FB788	C-2	R723	D-1	R944	E-6
C860	D-3	FB789	C-2	R724	G-6	R945	F-7
C861	E-2	FB790	C-1	R729	B-7	R952	F-6
C862	E-3	FB791	B-2	R782	C-2	R954	F-6
C864	E-2	FB801	D-4	R787	C-1	R958	F-6
C901	D-7	FB802	D-4	R803	E-4	R959	F-6
C902	D-7	FB803	D-4	R807	D-4	R960	F-7
C903	E-5	FB901	E-5	R819	D-4	R961	E-7
C904	D-6	FB902	E-5	R855	D-3	R962	E-7
C905	D-6	FB903	E-4	R856	E-3	R963	D-7
C906	D-6			R857	E-3	R964	D-7
C907	D-6	IC901	D-5	R858	E-3	R965	D-7
C908	D-6	IC904	E-6	R859	D-3	R966	D-7
C909	E-5			R860	D-3	R967	D-7
C910	E-6	L851	E-3	R861	D-3	R968	E-7
C911	E-5	L901	D-6	R862	D-3	R969	D-7
C912	E-6	L902	D-6	R863	D-3	R970	E-7
C913	D-4	L903	E-6	R865	D-3	R971	D-7
C914	D-7	L904	F-7	R866	D-3	R972	E-7
C915	C-6	L905	F-7	R873	C-3	R973	D-7
C917	E-4			R901	D-6	R975	D-7
C918	F-6	Q854	E-3	R902	D-6	R977	D-7
C919	E-7	Q855	D-3	R903	D-6	R982	D-4
C920	E-6	Q856	E-3	R904	D-6	R986	E-6
C927	F-7	Q857	D-3	R905	D-6		
		Q858	D-3	R906	D-6	S701	A-7
D701	B-2	Q859	D-3	R907	D-5	S702	A-5
D702	A-3	Q860	E-2	R908	D-6	S703	B-5
D703	A-3	Q861	C-3	R909	E-5	S704	D-1
D782	E-4	Q901	D-6	R911	D-6	S705	A-2
D783	F-5	Q902	D-6	R912	D-6	S706	C-1
D785	C-1	Q906	D-7	R915	D-5	S707	G-6
D789	F-5	Q907	D-7	R917	D-5	S708	D-1
D790	F-5	Q908	D-7	R919	E-6	S709	F-1
D852	C-1			R921	D-5		
D854	C-3	R708	A-3	R922	E-6		
D901	D-5	R712	A-3	R924	D-5		
D902	D-6	R714	A-3	R926	E-5		
D903	E-6	R716	A-6	R928	D-5		

PK-53 BOARD (SIDE B)

BT701	B-13	D784	E-11	R709	B-8	R946	E-8
		D786	C-14	R710	B-8	R947	E-8
C701	B-9	D787	C-14	R711	B-9	R949	E-8
C702	B-10	D788	C-14	R713	B-12	R950	E-8
C703	B-9	D853	D-12	R715	B-12	R951	E-8
C704	B-9	D904	E-8	R725	B-8	R957	E-8
C705	A-12	D906	D-9	R726	B-8	R953	E-8
C706	A-12			R853	E-12	R956	E-8
C707	B-9	FB786	E-11	R854	E-12	R974	C-8
C708	B-9			R864	E-12	R976	C-9
C709	B-9	IC701	B-9	R867	E-13	R979	D-8
C710	B12	IC702	B-12	R868	E-13	R980	D-8
C711	B-12	IC851	D-12	R869	D-12	R981	D-9
C781	C-13	IC852	D-12	R870	D-12	R983	D-10
C782	C-13	IC902	E-3	R871	D-12	R984	D-10
C783	C-14	IC903	E-8	R872	C-12	R987	E-10
C851	E-12			R874	D-12		
C855	E-12	J781	B-14	R876	D-12	SE701	A-12
C863	D-12			R910	D-10		
C865	D-12	L701	B-10	R913	D-10	T851	D-13
C866	D-13	L702	B-12	R914	D-10		
C915	D-11	L852	E-12	R916	E-10		
C916	E-11	L853	E-13	R920	D-10		
C921	E-8			R923	D-11		
C923	E-8	Q851	D-12	R925	D-10		
C924	E-8	Q852	D-12	R927	D-10		
C925	E-9	Q853	E-13	R930	D-10		
C928	E-8	Q903	E-10	R933	F-9		
C929	C-8	Q904	E-10	R934	D-11		
C931	D-9	Q905	E-11	R935	D-11		
				R936	D-11		
CN701	D-10	R702	B-9	R937	E-10		
CN702	B-8	R703	A-12	R938	D-11		
CN781	E-10	R704	A-12	R939	E-11		
CN851	C-12	R706	B-9	R940	E-11		
CN901	C-8	R707	B-9	R945	E-8		

SECTION 5
ADJUSTMENTS

5-1. ADJUSTMENT

: Added portion. : Changed portion.

1-5. LCD SYSTEM ADJUSTMENT

[Page: 5-29]

1-5-1. LCD Type Check

By measuring the resistor value between Pin ⑬ of CN803 and Pin ④ of CN803, the type of LCD can be discriminated.

Resistor value	LCD type	Adjustment
4.7 kΩ	TYPE SH	Perform "1-5-2. LCD SYSTEM
47 kΩ	TYPE CA	ADJUSTMENT (PK-49 board)"
10 kΩ	TYPE SA	Perform "1-5-3. LCD SYSTEM
22 kΩ	TYPE ST	ADJUSTMENT (PK-53 board)"

[Page: 5-30]

1-5-2. LCD SYSTEM ADJUSTMENT (PK-49 board)

1. LCD Initial Data Input

Mode	PLAY
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	D0 to D9, DC to DF

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, and input the data in the following table.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

Address	Data		Remark
	LCD TYPE SH	LCD TYPE CA	
D0	A2	B2	Bright adj.
D1	66	63	Color adj.
D2	A8	A0	White balance adj.
D3	7A	6A	White balance adj.
D4	B8	C0	Contrast adj.
D5	B0	54	D range adj.
D6	7C	8A	V-COM level adj.
D7	6F	6F	VCO adj. (NTSC)
D8	74	8A	V-COM adj.
D9	73	73	Fixed data
DC	B5	B5	Fixed data
DD	6F	4F	VCO adj. (PAL)
DE	13	13	Fixed data
DF	00	00	Fixed data

1-5-3. LCD SYSTEM ADJUSTMENT (PK-53 board)

1. LCD Initial Data Input

Mode	PLAY
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	D0 to D9, DC to DF

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, and input the data in the following table.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

Address	Data		Remark
	LCD TYPE SA	LCD TYPE ST	
D0	20	20	Bright adj.
D1	62	62	Color adj.
D2	A0	A0	White balance adj.
D3	88	88	White balance adj.
D4	D0	C0	Contrast adj.
D5	90	90	Black limit adj.
D6	90	90	VG center adj.
D7	70	78	VCO adj. (NTSC)
D8	98	75	V-COM adj.
D9	73	73	Fixed data
DC	B5	AA	Fixed data
DD	90	98	VCO adj. (PAL)
DE	33	33	Fixed data
DF	00	00	Fixed data

2. VCO Adjustment (PK-53 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	PLAY
Signal	Arbitrary
Measurement Point	CH1: Video terminal of AUDIO/VIDEO OUT jack CH2: Pin ⑦ of CN803 of FC-72 board (HSY)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D7 (NTSC) DD (PAL)
Specified Value	LCD TYPE SA: t = 2.05 ± 0.10 µsec (NTSC) t = 3.55 ± 0.10 µsec (PAL) LCD TYPE ST: t = 2.10 ± 0.10 µsec (NTSC) t = 3.20 ± 0.10 µsec (PAL)

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Menu setting:

VIDEO OUT of SET UP menu ..... NTSC
(This adjustment must be performed in NTSC mode, so don't set the menu setting to "PAL".)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Change the data of page: D, address: D7, and adjust the phase difference time (t) to the NTSC specified value.
3) Press the PAUSE button of the adjustment remote commander.
4) Change the data of page: D, address: DD, and adjust the phase difference time (t) to the PAL specified value.
5) Press the PAUSE button.
6) Select page: 0, address: 01, and set data: 00.

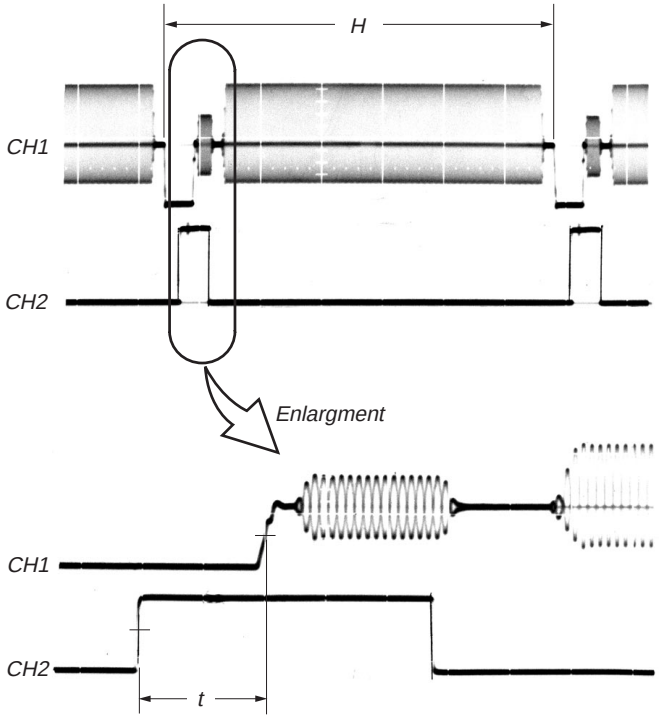


Fig. 5-1-31.

3. Black Limit Adjustment (PK-53 board)

Set the amplitude of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN803 of FC-72 board (VG) External trigger: Pin ⑧ of CN803 of FC-72 board (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D5
Specified Value	LCD TYPE SA: A = 7.4 ± 0.1 V LCD TYPE ST: A = 8.2 ± 0.1 V

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: D, address: D0, set data: 20.
4) Select page: D, address: D5, change the data and set the voltage (A) between the reversed waveform black limit level and non-reversed waveform black limit level to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Perform "Bright Adjustment".
7) Select page: 0, address: 01, and set data: 00.

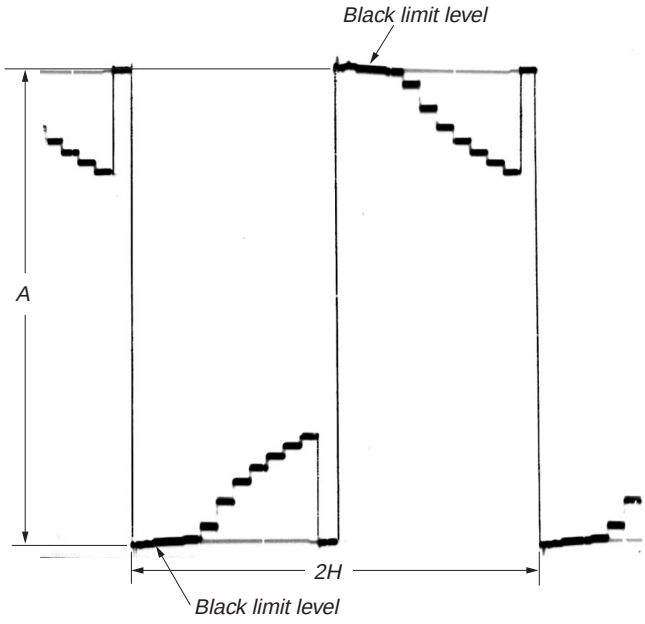


Fig. 5-1-32.

4. Bright Adjustment (PK-53 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN803 of FC-72 board (VG) External trigger: Pin ⑧ of CN803 of FC-72 board (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D0
Specified Value	LCD TYPE SA: A = 7.0 ± 0.1 V LCD TYPE ST: A = 7.8 ± 0.1 V

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: D, address: D0, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

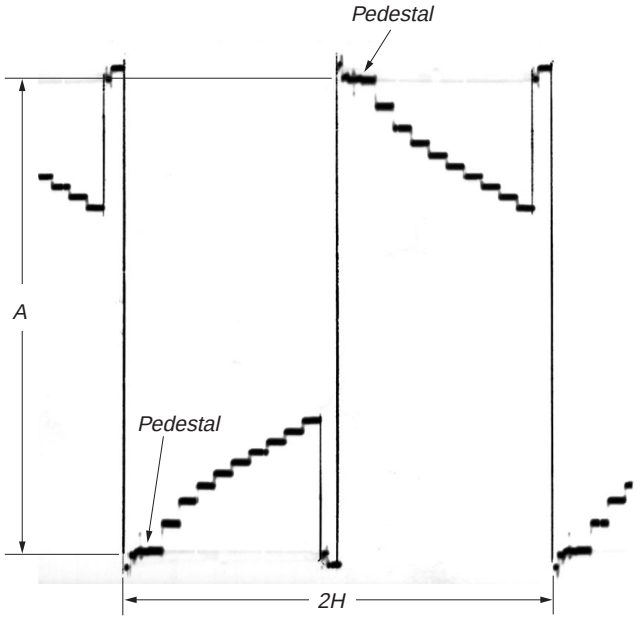


Fig. 5-1-33.

5. Contrast Adjustment (PK-53 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN803 of FC-72 board (VG) External trigger: Pin ⑧ of CN803 of FC-72 board (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D4
Specified Value	LCD TYPE SA: A = 2.27 ± 0.05 V LCD TYPE ST: A = 2.50 ± 0.05 V

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 03.
3) Select page: D, address: D4, change the data and set the voltage (A) between the 10 steps peak and pedestal to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

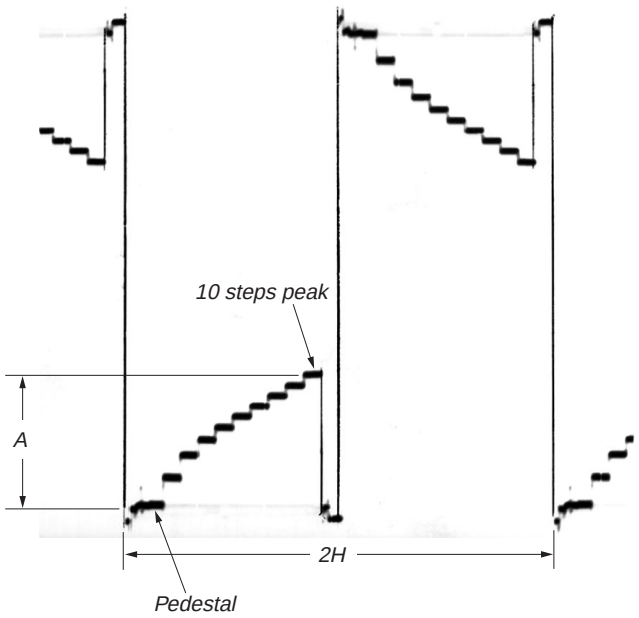


Fig. 5-1-34.

6. Color Adjustment (PK-53 board)

Set the color saturation to the standard value. If deviated, the color will be too dark or light.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN803 of FC-72 board (VG) External trigger: Pin ⑧ of CN803 of FC-72 board (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D1
Specified Value	LCD TYPE SA: A= 300 ± 50 mV LCD TYPE ST: A= 400 ± 50 mV

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 04.
3) Select page: D, address: D1, change the data and set the voltage (A) between the white 100% (Reference level) and green to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

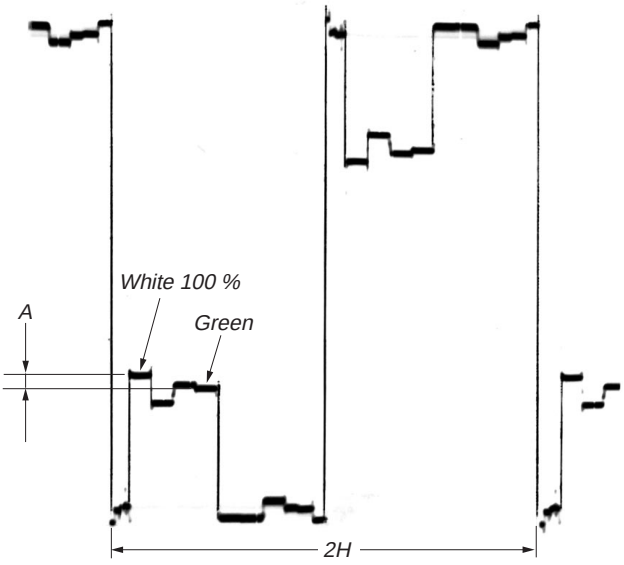


Fig. 5-1-35.

7. VG Center Adjustment (PK-53 board)

Set the video signal center level of LCD panel to an appropriate level.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN803 of FC-72 board (VG)
Measuring Instrument	Digital voltmeter
Adjustment Page	D
Adjustment Address	D6
Specified Value	LCD TYPE SA: A= 6.00 ± 0.05 Vdc LCD TYPE ST: A= 7.00 ± 0.05 Vdc

Note: Refer to "1-5-1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 02.
3) Select page: D, address: D6, change the data and set the DC voltage (A) of VG signal to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

8. V-COM Adjustment (PK-53 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	D8
Specified Value	The brightness difference between the section A and section B is minimum.

Note: Perform "Bright Adjustment" and "Contrast Adjustment" before this adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 02.
3) Select page: 2, address: 10, set data: 02.
4) Select page: D, address: D8, change the data so that the brightness of the section A and that of the section B is equal.
5) Press the PAUSE button of the adjustment remote commander.
6) For the "ST" type LCD only
   Select page: D, address: D8, subtract 9 from the data, and press the PAUSE button.
7) Select page: 5, address: F1, set data: 00.
8) Select page: 2, address: 10, set data: 00.
9) Select page: 0, address: 01, and set data: 00.

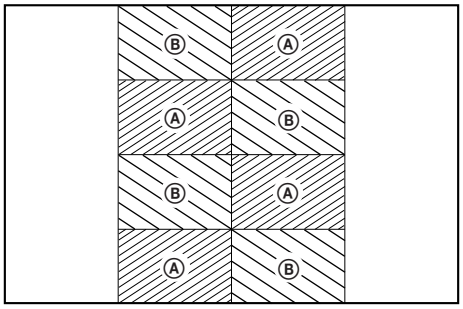


Fig. 5-1-36.

9. White Balance Adjustment (PK-53 board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	D2, D3
Specified Value	The LCD screen should not be colored.

Note 1: Use the AC power adaptor during this adjustment.
Note 2: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC901

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 5, address: F1, set data: 02.
3) Select page: D, address: D2 and D3, set the data to the initial value.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

	Address		Remark
	D2	D3	
Data	A0	88	LCD TYPE SA
	A0	88	LCD TYPE ST

4) Check that the LCD screen is not colored. If colored, change the data of page: D, address: D2 and D3 so that the LCD screen is not colored.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
5) Select page: 5, address: F1, set data: 00.
6) Select page: 0, address: 01, and set data: 00.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

NOTE:

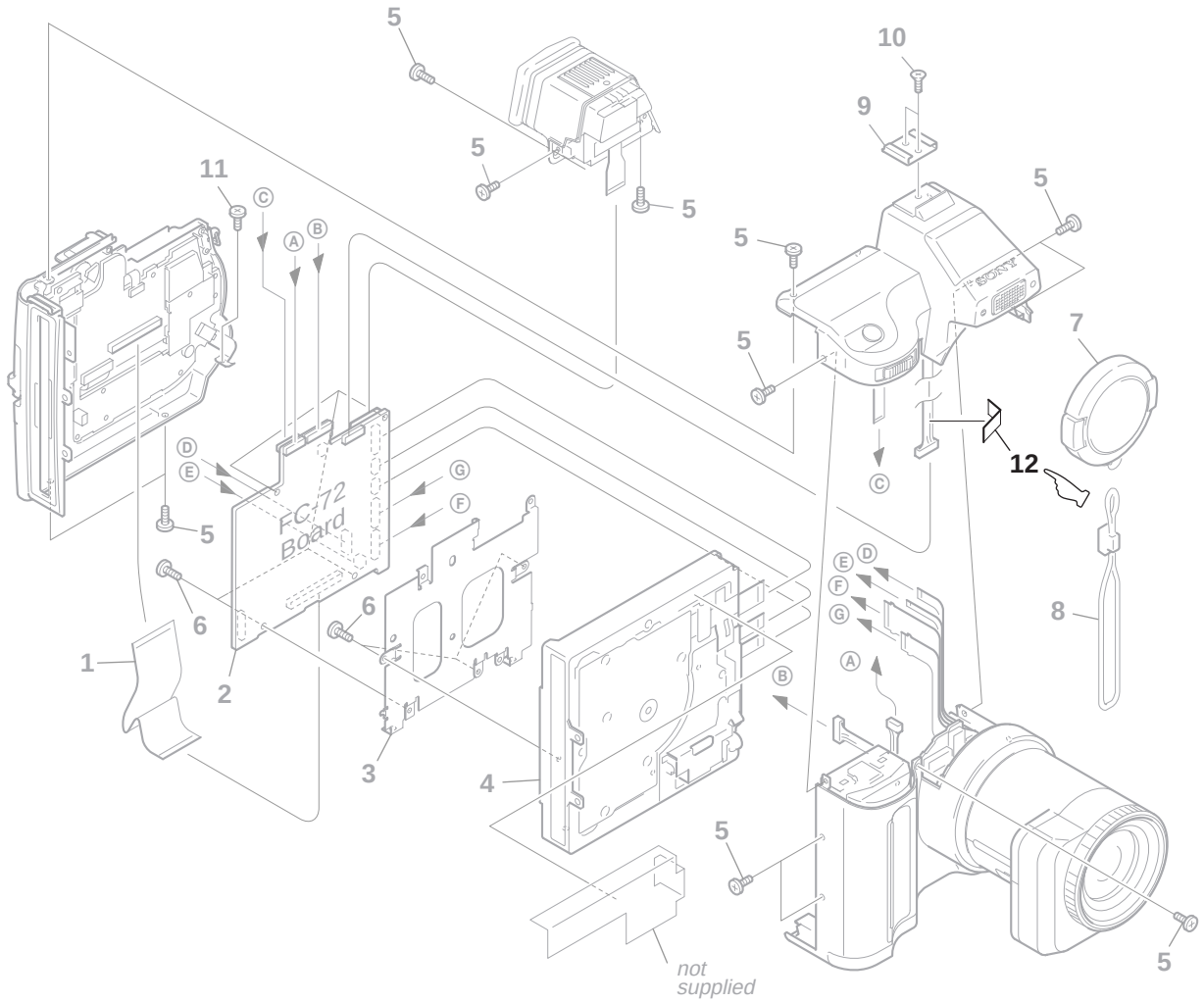
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  CND : Canadian model.
  AUS : Australian model.
  HK : Hong Kong model.
  KR : Korea model.
  JE : Tourist model.
  J : Japanese model.

The components identified by mark ⚠or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. OVERALL ASSEMBLY SECTION

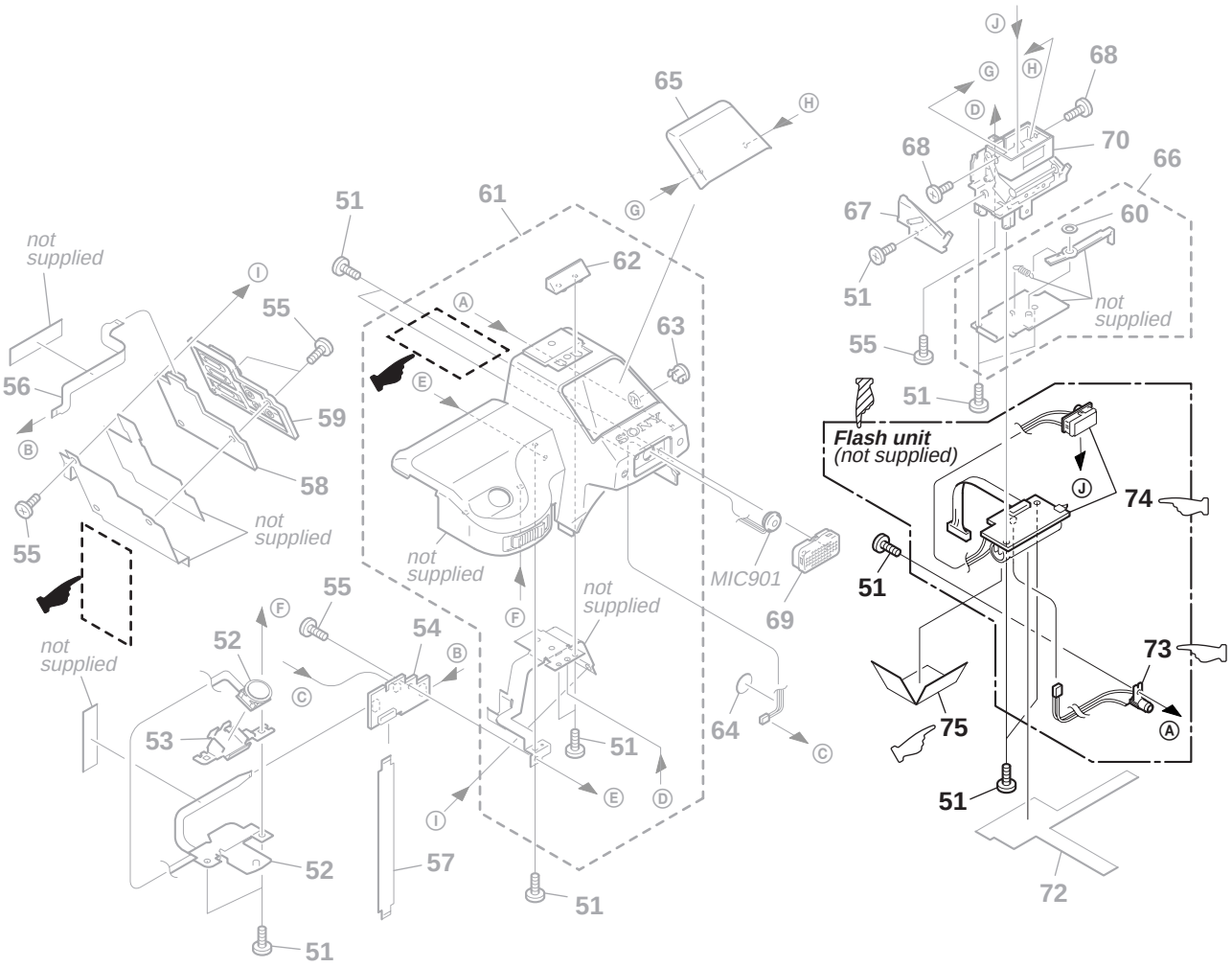
☞ : Added portion.



Ref. No.	Part No.	Description	Remarks
1	1-678-338-11	FP-175 FLEXIBLE BOARD	
2	A-7096-165-A	FC-72(95) BOARD, COMPLETE (SERVICE)	
* 3	3-062-814-01	FRAME, FDD	
4	1-772-563-11	DRIVE, FLOPPY DISK	
5	3-968-729-91	SCREW(M2), LOCK ACE, P2	
6	7-627-854-07	PRECISION SCREW +P 2X2.5 TYPE3	
7	X-3950-691-1	CAP ASSY, LENS	
8	3-062-043-01	STRING CAP	
9	3-724-511-51	SHOE, ACCESSORY	
10	3-056-624-01	LOCK ACE, +K SCREW (M2)	
11	3-968-729-51	SCREW (M2), LOCK ACE, P2	
* 12	3-063-155-01	PLATE, FPC ☞	

6-1-2. TOP CABINET ASSEMBLY SECTION

: Added portion. : Changed portion. : Deleted portion.

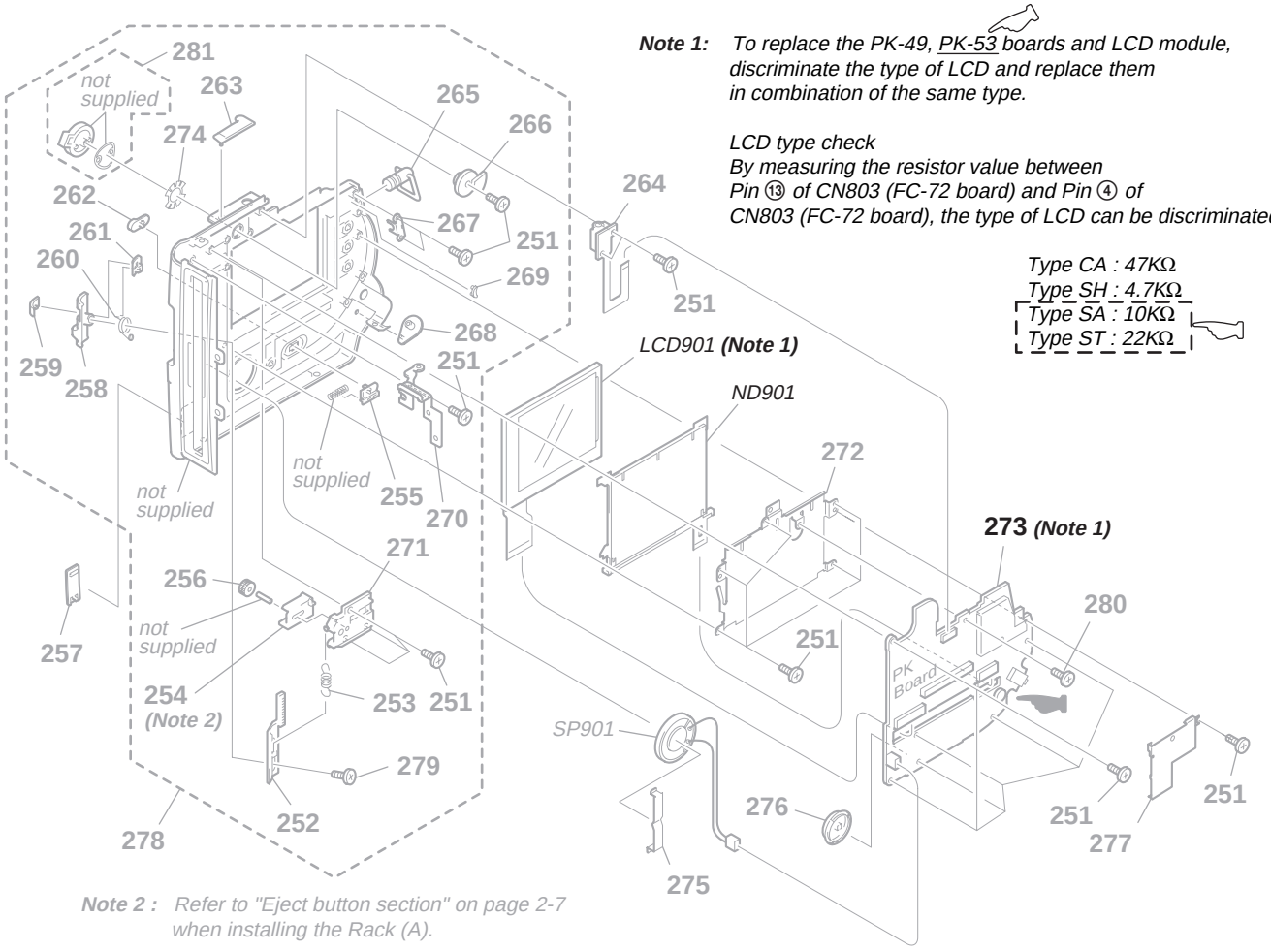


Ref. No.	Part No.	Description	Remarks
51	3-948-339-61	TAPPING	
52	1-418-896-11	SWITCH BLOCK, CONTROL (ZOOM BLOCK 360) (ZOOM AND SHUTTER)	
53	3-060-905-01	HOLDER (360), SW	
54	A-7074-451-A	MA-379 BOARD, COMPLETE	
55	3-968-729-91	SCREW (M2), LOCK ACE, P2	
56	1-678-328-11	FP-174 FLEXIBLE BOARD	
57	1-678-325-11	FP-171 FLEXIBLE BOARD	
58	A-7074-452-A	AE-022 BOARD, COMPLETE	
59	3-060-898-01	BUTTON, AE	
60	3-695-567-01	WASHER (1.4), SPECIAL	
61	X-3950-612-1	CABINET ASSY, TOP	
62	3-060-913-01	STOPPER, SHOE	
63	3-060-868-01	BUTTON, OPEN	

Ref. No.	Part No.	Description	Remarks
64	3-062-299-01	SHEET, MICROPHONE	
65	3-060-902-01	CABINET (UPPER), ST	
66	X-3950-615-1	BLIND ASSY	
67	3-060-871-01	BASE, TILT	
68	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2	
69	X-3950-614-1	GRILLE ASSY, MICROPHONE	
70	X-3950-613-1	ST ASSY	
⚠71	1-476-069-11	~~FLASH UNIT~~	
* 72	3-062-816-01	SHEET, WATERPROOF	
73	9-885-005-94	ELEMENT, RAY CATCHER	
⚠74	9-885-005-95	FLASH	
* 75	3-063-352-01	SHEET, ST	
MIC901	1-542-428-11	MICROPHONE UNIT	

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-6. CABINET (REAR) BLOCK ASSEMBLY SECTION ☞ : Added portion.



Note 1: *To replace the PK-49, PK-53 boards and LCD module, discriminate the type of LCD and replace them in combination of the same type.*

LCD type check
By measuring the resistor value between Pin ⑬ of CN803 (FC-72 board) and Pin ④ of CN803 (FC-72 board), the type of LCD can be discriminated.

Type CA : 47KΩ
Type SH : 4.7KΩ
Type SA : 10KΩ ☜
Type ST : 22KΩ

Note 2 : *Refer to "Eject button section" on page 2-7 when installing the Rack (A).*

☞ : BT701(Lithium battary) PK board on the mount position.(See page 4-33)

Ref. No.	Part No.	Description	Remarks
251	3-948-339-61	TAPPING	
252	3-058-787-01	RACK (A)	
253	3-058-790-01	SPRING, EJECT	
254	3-058-788-01	RACK (B)	
255	3-060-839-01	RETAINER, P KNOB	
256	3-058-786-01	GEAR, PINION	
257	3-058-792-11	LID, CPC	
258	3-058-782-01	KNOB, EJECT	
259	3-058-783-01	BUTTON, LOCK	
260	3-058-785-01	SPRING, LOCK BUTTON	
261	3-058-784-01	RETAINER, LOCK BUTTON	
262	3-060-838-01	KNOB, POWER	
263	3-060-928-01	COVER, ACC JACK	
264	1-678-329-21	FP-176 FLEXIBLE BOARD (INCLUDING JACK)	
265	3-060-931-01	SHAFT, STRAP	
266	3-060-850-01	RETAINER, MODE SELECTION	
267	3-060-848-01	SHEET METAL (R), STRAP	
268	3-060-927-01	COVER, AV JACK	
269	3-060-932-01	DAMPER, FRICTION	
270	3-060-886-01	SHEET METAL (L), STRAP	
271	3-058-789-01	COVER, GEAR	

Ref. No.	Part No.	Description	Remarks
272	3-060-889-01	PLATE, BL FIXED	
273	A-7074-447-A	PK-49 (CASI) BOARD, COMPLETE (CA)	
273	A-7074-448-A	PK-49 (SHAP) BOARD, COMPLETE (SH)	
273	A-7074-507-A	PK-53 (SNYO) BOARD, COMPLETE (SA)	
273	A-7074-510-A	PK-53 (SC) BOARD, COMPLETE (ST)	
274	3-060-901-01	SHEET METAL, SELECTION CLICK	
* 275	3-058-791-01	RETAINER, SPEAKER	
276	3-061-157-11	BUTTON, FUNCTION	
277	X-3950-622-1	CASE (LOWER) ASSY, Z SHIELD	
278	X-3950-610-1	CABINET (REAR) ASSY	
279	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION	
280	3-968-729-51	SCREW (M2), LOCK ACE, P2	
281	X-3950-848-1	KNOB ASSY, MODE SELECTION (SERVICE)	
LCD901	1-803-858-21	INDICATOR MODULE LIQUID CRYST (SH)	
LCD901	1-803-860-21	INDICATOR MODULE LIQUID CRYST (CA)	
LCD901	1-803-997-11	INDICATOR MODULE LIQUID CRYST (SA)	
LCD901	8-753-050-55	ACX307AK-1 (ST)	
⚠ ND901	1-517-751-21	TUBE, FLUORESCENT,COLD CATHODE (EXCEPT SA)	
⚠ ND901	1-517-751-61	TUBE, FLUORESCENT,COLD CATHODE (SA)	
SP901	1-505-862-41	SPEAKER (2.0 CM)	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... , uPB... , µPB... , uPC... , µPC... , uPD..., µPD...
- Abbreviation
  CND : Canadian model.
  AUS : Australian model.
  HK : Hong Kong model.
  CN : Chinese model.
  KR : Korea model.
  JE : Tourist model.
  J : Japanese model.
- LCD type check
  By measuring the resistor value between Pin ⑬ of CN803 (FC-72 board) and Pin ④ of CN803 (FC-72 board), the type of LCD can be discriminated.
  Type SA: 10 kΩ
  Type ST: 22 kΩ

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
	A-7074-507-A	PK-53 (SNYO) BOARD, COMPLETE (SA)			
		**********			
	A-7074-510-A	PK-53 (SC) BOARD, COMPLETE (ST)			
		**********			
					(Ref.No.;5000Series)
		< BATTERY >			
BT701	1-528-900-11	BATTERY, LITHIUM SECONDARY			
		< CAPACITOR >			
C705	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C706	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C710	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C711	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C851	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C852	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C853	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C854	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C855	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C856	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C857	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C858	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C859	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C861	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C862	1-115-156-11	CERAMIC CHIP	1uF		10V
C863	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C864	1-164-657-11	CERAMIC CHIP	0.015uF	10%	50V
C865	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
⚠C866	1-131-959-91	CERAMIC CHIP	12PF	10%	3KV
C901	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C902	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C903	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C904	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C905	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C906	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
					(SA)
C907	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C908	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C909	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C910	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C911	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C912	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C913	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C914	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C915	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C916	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C917	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C918	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C919	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C920	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C921	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C922	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C923	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C924	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C925	1-127-760-91	CERAMIC CHIP	4.7uF	10%	6.3V
C926	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C927	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
C928	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C929	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V (ST)
C931	1-109-982-11	CERAMIC CHIP	1.0uF	10%	10V (ST)
C932	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN701	1-778-637-21	CONNECTOR, FFC/FPC (ZIF) 50P			
CN702	1-784-342-11	HOUSING, CONNECTOR 2P			
CN781	1-691-344-11	CONNECTOR, FFC/FPC (ZIF) 6P			
CN851	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
CN901	1-691-362-11	CONNECTOR, FFC/FPC (ZIF) 24P			
		< DIODE >			
D701	8-719-061-81	DIODE TLYU1002(TPX1,SONY)			
D702	8-719-061-81	DIODE TLYU1002(TPX1,SONY)			
D703	8-719-064-05	DIODE TLGU1002(TPX1,SONY)			
D782	8-719-045-87	DIODE MA4Z082WA-(TX).SO			
D783	8-719-045-87	DIODE MA4Z082WA-(TX).SO			
D784	8-719-073-01	DIODE MA111-(K8).SO			
D785	8-719-073-01	DIODE MA111-(K8).SO			
D786	8-719-045-87	DIODE MA4Z082WA-(TX).SO			
D787	8-719-045-87	DIODE MA4Z082WA-(TX).SO			
D788	8-719-045-87	DIODE MA4Z082WA-(TX).SO			

Ref. No.	Part No.	Description	Remarks
D789	8-719-045-87	DIODE MA4Z082WA-(TX).SO	
D790	8-719-045-87	DIODE MA4Z082WA-(TX).SO	
D853	8-719-073-01	DIODE MA111-(K8).S0	
D854	8-719-062-44	DIODE PG1112H-TR	
D904	8-713-102-80	DIODE 1T369-01-T8A	
D906	8-719-050-42	DIODE RD3.3UM-T1B (ST)	
		< FERRITE BEAD >	
FB781	1-414-633-22	INDUCTOR CHIP 0UH	
FB782	1-414-633-22	INDUCTOR CHIP 0UH	
FB783	1-414-633-22	INDUCTOR CHIP 0UH	
FB784	1-414-633-22	INDUCTOR CHIP 0UH	
FB785	1-414-633-22	INDUCTOR CHIP 0UH	
FB786	1-414-633-22	INDUCTOR CHIP 0UH	
FB787	1-414-633-22	INDUCTOR CHIP 0UH	
FB788	1-414-228-11	INDUCTOR CHIP 0UH	
FB789	1-500-284-21	INDUCTOR CHIP 0UH	
FB790	1-500-284-21	INDUCTOR CHIP 0UH	
FB791	1-469-324-21	FERRITE 0UH	
FB901	1-414-229-11	INDUCTOR CHIP 0UH	
FB902	1-414-229-11	INDUCTOR CHIP 0UH	
FB903	1-414-229-11	INDUCTOR CHIP 0UH	
		< IC >	
IC702	8-759-572-54	IC TA6009FN(EL)	
IC851	8-759-521-35	IC TL5001CDR	
IC852	8-759-075-70	IC TA75S393F-TE85R	
IC901	8-759-524-98	IC CXA8116R-T4	
IC902	8-759-364-05	IC MB40D001PFV-G-BND-ER	
IC903	8-759-327-01	IC NJM062V(TE2)	
IC904	8-752-405-01	IC CXD3510R-T4 (ST)	
IC904	8-759-677-84	IC LC12017-52T-TE-B (SA)	
		< JACK >	
J781	1-695-514-31	JACK (SMALL TYPE) 1P (AUDIO(MONO)VIDEO OUT)	
		< COIL >	
L702	1-414-756-11	INDUCTOR 47uH	
L851	1-414-753-91	INDUCTOR 4.7uH	
L852	1-424-674-11	INDUCTOR 22uH	
L853	1-419-387-21	INDUCTOR 100uH	
L901	1-414-754-11	INDUCTOR 10uH	
L902	1-414-757-11	INDUCTOR 100uH	
L903	1-414-756-11	INDUCTOR 47uH	
L904	1-412-949-21	INDUCTOR 6.8uH	
		< TRANSISTOR >	
Q851	8-729-042-72	TRANSISTOR UN9214J-(K8).SO	
Q852	8-729-042-59	TRANSISTOR UN9112J-(K8).SO	
Q853	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q854	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q855	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q856	8-729-823-84	TRANSISTOR FP102-TL	
Q857	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q858	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q859	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q860	8-729-039-43	TRANSISTOR FP216-TL	
Q861	8-729-042-59	TRANSISTOR UN9112J-(K8).SO	
Q901	8-729-037-74	TRANSISTOR UN9213J-(K8).SO (SA)	
Q902	8-729-046-75	TRANSISTOR SI2301DS-T1 (SA)	
Q903	8-729-427-74	TRANSISTOR XP4601-TXE	
Q904	8-729-427-74	TRANSISTOR XP4601-TXE	
Q905	8-729-427-74	TRANSISTOR XP4601-TXE	
Q908	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR (TPL3)(ST)	
		< RESISTOR >	
R703	1-216-864-11	METAL CHIP 0 5% 1/16W	
R708	1-216-819-11	METAL CHIP 680 5% 1/16W	
R712	1-216-814-11	METAL CHIP 270 5% 1/16W	
R713	1-218-872-11	METAL CHIP 11K 0.5% 1/16W	
R714	1-216-819-11	METAL CHIP 680 5% 1/16W	
R715	1-216-847-11	METAL CHIP 150K 5% 1/16W	
R716	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	
R717	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	
R718	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R719	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R720	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R721	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R722	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R723	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R724	1-216-833-91	RES-CHIP 10K 5% 1/16W	
R729	1-216-864-11	METAL CHIP 0 5% 1/16W	
R782	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R787	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R853	1-218-867-11	METAL CHIP 6.8K 0.5% 1/16W	
R854	1-218-881-11	METAL CHIP 27K 0.5% 1/16W	
R855	1-218-897-11	METAL CHIP 120K 0.5% 1/16W	
R856	1-216-818-11	METAL CHIP 560 5% 1/16W	
R857	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R858	1-216-818-11	METAL CHIP 560 5% 1/16W	
R859	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R860	1-218-871-11	METAL CHIP 10K 0.5% 1/16W	
R861	1-218-853-11	METAL CHIP 1.8K 0.5% 1/16W	
R862	1-218-859-11	METAL CHIP 3.3K 0.5% 1/16W	
R863	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R864	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R865	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R866	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R867	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R868	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R869	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R870	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R871	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R872	1-216-817-11	METAL CHIP 470 5% 1/16W	
R873	1-216-810-11	METAL CHIP 120 5% 1/16W	
R874	1-216-295-91	SHORT 0	
R876	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R901	1-216-864-11	METAL CHIP 0 5% 1/16W (SA)	
R902	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R903	1-216-845-11	METAL CHIP 100K 5% 1/16W (SA)	
R904	1-216-845-11	METAL CHIP 100K 5% 1/16W (SA)	

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Ref. No.	Part No.	Description			Remarks
R905	1-216-833-91	RES-CHIP	10K	5%	1/16W
R906	1-216-809-11	METAL CHIP	100	5%	1/16W
R907	1-216-809-11	METAL CHIP	100	5%	1/16W
R908	1-216-809-11	METAL CHIP	100	5%	1/16W
R909	1-216-809-11	METAL CHIP	100	5%	1/16W
R910	1-216-837-11	METAL CHIP	22K	5%	1/16W
R911	1-216-845-11	METAL CHIP	100K	5%	1/16W
R912	1-216-295-91	SHORT	0 (ST)		
R913	1-216-837-11	METAL CHIP	22K	5%	1/16W
R914	1-216-839-11	METAL CHIP	33K	5%	1/16W
R915	1-216-841-11	METAL CHIP	47K	5%	1/16W
R916	1-216-839-11	METAL CHIP	33K	5%	1/16W
R917	1-216-841-11	METAL CHIP	47K	5%	1/16W
R920	1-216-839-11	METAL CHIP	33K	5%	1/16W
R921	1-216-839-11	METAL CHIP	33K	5%	1/16W (ST)
R921	1-216-841-11	METAL CHIP	47K	5%	1/16W (SA)
R923	1-216-839-11	METAL CHIP	33K	5%	1/16W (ST)
R923	1-216-840-11	METAL CHIP	39K	5%	1/16W (SA)
R924	1-216-841-11	METAL CHIP	47K	5%	1/16W
R925	1-216-837-11	METAL CHIP	22K	5%	1/16W (ST)
R925	1-216-833-91	RES-CHIP	10K	5%	1/16W (SA)
R926	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R927	1-216-841-11	METAL CHIP	47K	5%	1/16W
R928	1-216-841-11	METAL CHIP	47K	5%	1/16W
R929	1-216-845-11	METAL CHIP	100K	5%	1/16W
R930	1-216-833-91	RES-CHIP	10K	5%	1/16W
R931	1-216-809-11	METAL CHIP	100	5%	1/16W
R932	1-216-809-11	METAL CHIP	100	5%	1/16W
R933	1-216-809-11	METAL CHIP	100	5%	1/16W
R935	1-216-857-11	METAL CHIP	1M	5%	1/16W
R936	1-216-840-11	METAL CHIP	39K	5%	1/16W
R937	1-216-833-91	RES-CHIP	10K	5%	1/16W
R938	1-216-841-11	METAL CHIP	47K	5%	1/16W (ST)
R938	1-216-843-11	METAL CHIP	68K	5%	1/16W (SA)
R939	1-216-849-11	METAL CHIP	220K	5%	1/16W
R940	1-216-837-11	METAL CHIP	22K	5%	1/16W
R942	1-216-864-11	METAL CHIP	0	5%	1/16W (SA)
R943	1-216-864-11	METAL CHIP	0	5%	1/16W (ST)
R944	1-216-845-11	METAL CHIP	100K	5%	1/16W
R945	1-216-840-11	METAL CHIP	39K	5%	1/16W (ST)
R945	1-216-842-11	METAL CHIP	56K	5%	1/16W (SA)
R947	1-216-847-11	METAL CHIP	150K	5%	1/16W (SA)
R947	1-216-851-11	METAL CHIP	330K	5%	1/16W (ST)
R948	1-216-838-11	METAL CHIP	27K	5%	1/16W
R949	1-216-841-11	METAL CHIP	47K	5%	1/16W
R950	1-216-843-11	METAL CHIP	68K	5%	1/16W
R951	1-216-833-91	RES-CHIP	10K	5%	1/16W
R953	1-216-833-91	RES-CHIP	10K	5%	1/16W
R955	1-216-864-11	METAL CHIP	0	5%	1/16W
R956	1-216-839-11	METAL CHIP	33K	5%	1/16W
R957	1-216-821-11	METAL CHIP	1K	5%	1/16W
R958	1-216-864-11	METAL CHIP	0	5%	1/16W (ST)
R959	1-216-864-11	METAL CHIP	0	5%	1/16W (SA)
R960	1-216-864-11	METAL CHIP	0	5%	1/16W (ST)
R961	1-216-864-11	METAL CHIP	0	5%	1/16W (ST)
R962	1-216-864-11	METAL CHIP	0	5%	1/16W
R963	1-216-864-11	METAL CHIP	0	5%	1/16W
R964	1-216-864-11	METAL CHIP	0	5%	1/16W
R965	1-216-864-11	METAL CHIP	0	5%	1/16W (ST)
R966	1-216-864-11	METAL CHIP	0	5%	1/16W (ST)
R967	1-216-831-11	METAL CHIP	6.8K	5%	1/16W (SA)
R968	1-216-864-11	METAL CHIP	0	5%	1/16W (SA)
R969	1-216-864-11	METAL CHIP	0	5%	1/16W (SA)
R970	1-216-864-11	METAL CHIP	0	5%	1/16W (SA)
R971	1-216-864-11	METAL CHIP	0	5%	1/16W (SA)
R972	1-216-864-11	METAL CHIP	0	5%	1/16W (SA)
R973	1-216-831-11	METAL CHIP	6.8K	5%	1/16W (SA)
R974	1-216-847-11	METAL CHIP	150K	5%	1/16W (ST)
R975	1-216-853-11	METAL CHIP	470K	5%	1/16W (ST)
R976	1-216-839-11	METAL CHIP	33K	5%	1/16W (ST)
R977	1-216-842-11	METAL CHIP	56K	5%	1/16W (ST)
R979	1-216-864-11	METAL CHIP	0	5%	1/16W (ST)
R980	1-216-864-11	METAL CHIP	0	5%	1/16W (ST)
R981	1-216-864-11	METAL CHIP	0	5%	1/16W (SA)
R982	1-216-864-11	METAL CHIP	0	5%	1/16W
R984	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R985	1-218-887-11	METAL CHIP	47K	0.5%	1/16W (ST)
R985	1-218-893-11	METAL CHIP	82K	0.5%	1/16W (SA)
R987	1-216-839-11	METAL CHIP	33K	5%	1/16W

< SWITCH >

S701	1-771-688-21	SWITCH, TACTILE (MENU)
S702	1-771-138-61	SWITCH, KEY BOARD (DISPLAY)
S703	1-572-467-21	SWITCH, PUSH (1 KEY) (POWER)
S704	1-771-138-61	SWITCH, KEY BOARD (VOLUME +)
S705	1-771-138-61	SWITCH, KEY BOARD (FLASH)

Ref. No.	Part No.	Description	Remarks
S706	1-771-138-61	SWITCH, KEY BOARD (VOLUME -)	
S707	1-771-331-21	SWITCH, PUSH (1 KEY) (PLAY)	
S708	1-771-138-61	SWITCH, KEY BOARD (LCD ON/OFF)	
S709	1-771-331-51	SWITCH, PUSH (1 KEY) (MOVIE)	
		< SENSOR >	
SE701	1-801-868-41	SENSOR, SHOCK	
		< TRANSFORMER >	
⚠T851	1-435-227-11	TRANSFORMER, INVERTER	

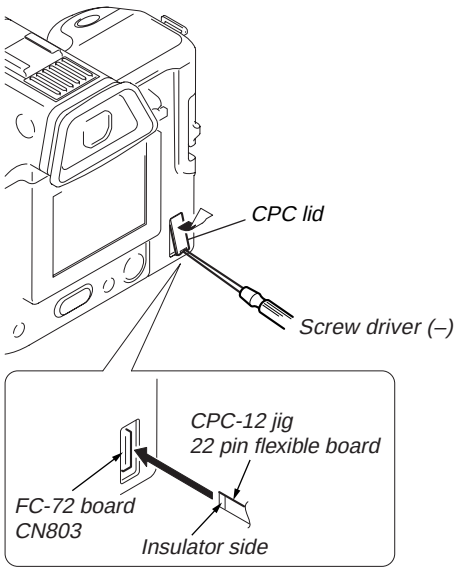
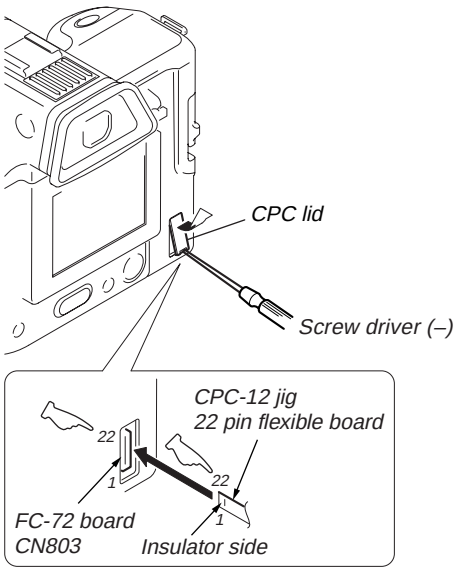
Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

[CORRECTION]

Correct your service manual as shown below.

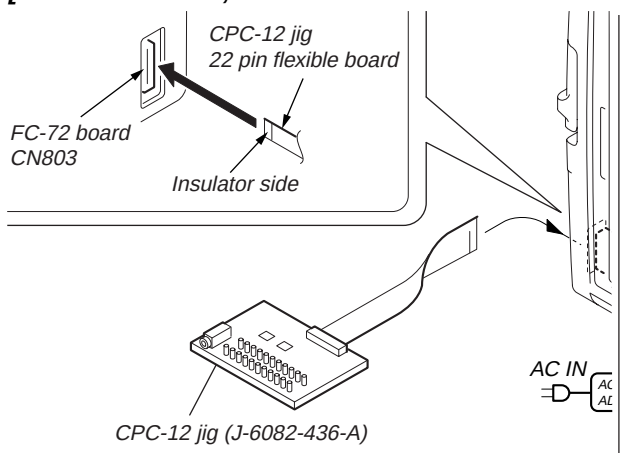
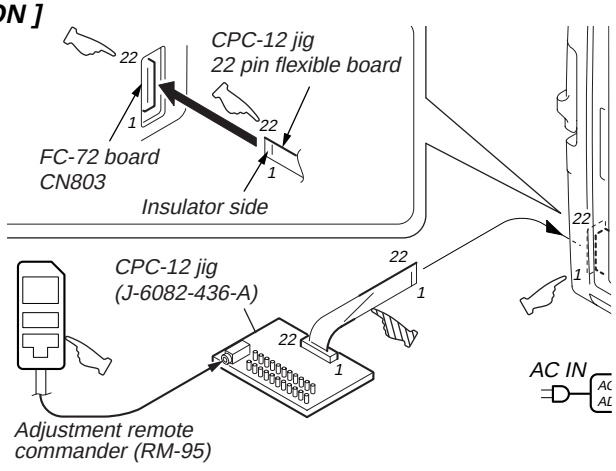
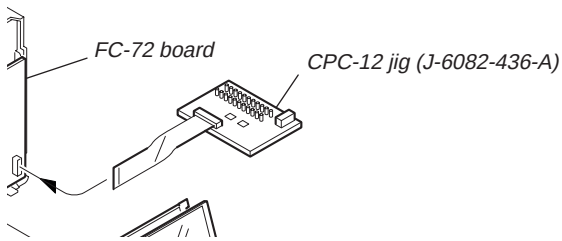
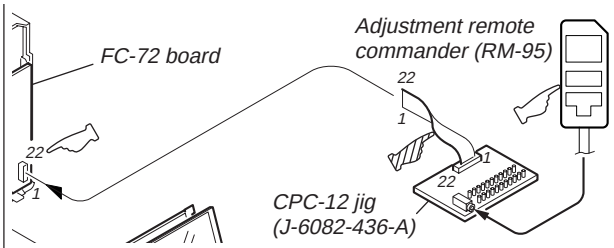
SERVICE NOTE

☞ : Added portion.

Page	INCORRECT	CORRECT
6		

SECTION 2. DISASSEMBLY

☞ : Added portion. ▨ : Changed portion.

Page	INCORRECT	CORRECT
2-2	**2-2. VF-143 BOARD, VF LENS ASSEMBLY** ***[MA-379 BOARD, EVF CHECK SERVICE POSITION]*** 	
2-3	**2-3. LCD, PK-49 BOARD** ***[LCD, PK-49 BOARD CHECK SERVICE POSITION]*** 	

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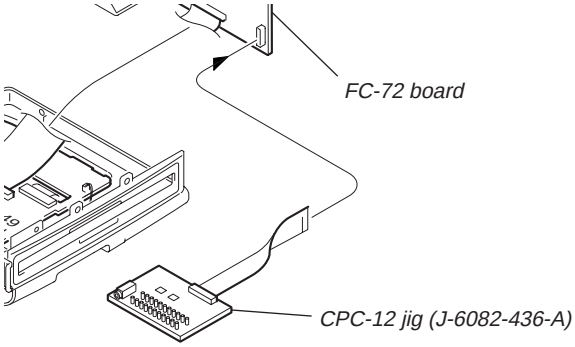
<tr><td>2-5</td><td>

2-4. FC-72, FU-139 BOARDS, FLOPPY DISK DRIVE

[FC-72, FU-139 BOARDS CHECK SERVICE POSITION]



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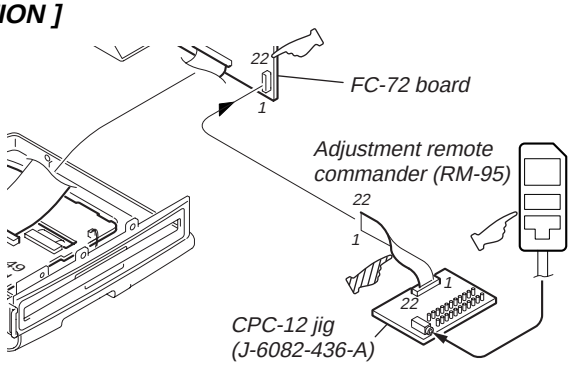

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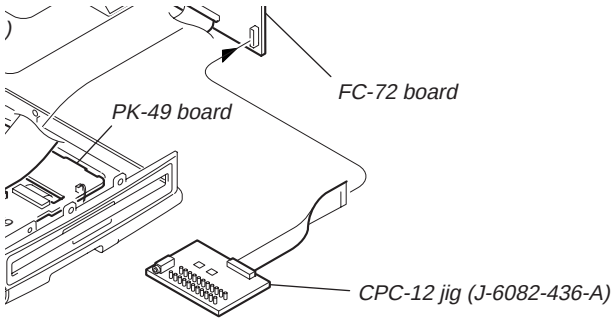
2-6. VP-50 BOARD, LENS BLOCK ASSEMBLY

[LENS BLOCK (CD-245 BOARD), VP-50 BOARD CHECK SERVICE POSITION]



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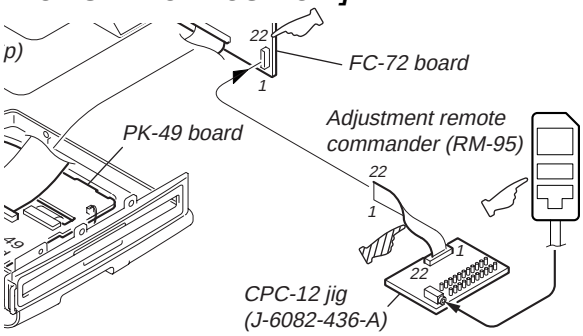

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SECTION 5. ADJUSTMENTS

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1. Before Starting Adjustment

1-1. Adjusting Items When Replacing Main Parts and Boards

VF-143 board	IC502	(RGB decoder)
VF-143 board	IC503	(EVR)
VF-143 board	IC503	(Timing generator)
VF-143 board	ND601	(Fluorescent tube)
VF-143 board	Q501, D501	(Eye sensor)

</td><td>

VF-143 board	IC502	(RGB decoder)
VF-143 board	IC503	(EVR)
VF-143 board	IC603	(Timing generator)
VF-143 board	ND601	(Fluorescent tube)
VF-143 board	Q501, D501	(Eye sensor)

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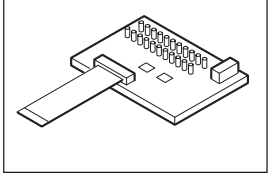
<tr><td>5-3</td><td>

5-1. ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT

J-7



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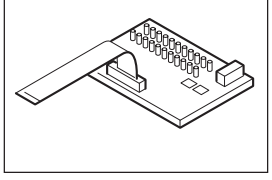
J-7



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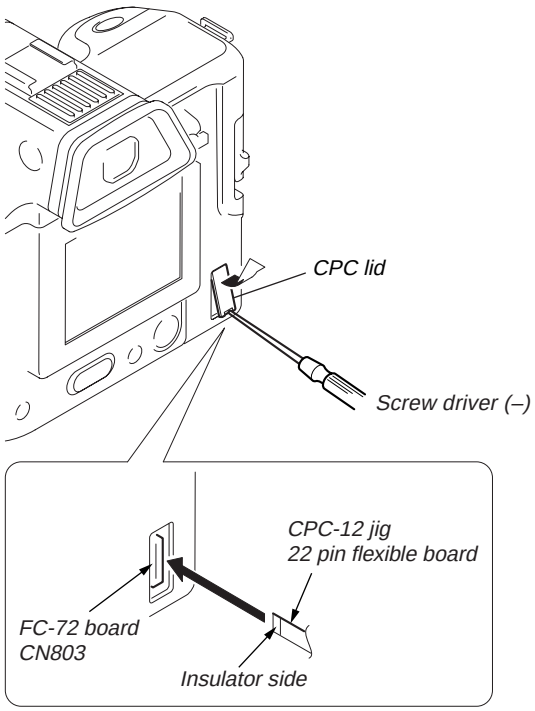
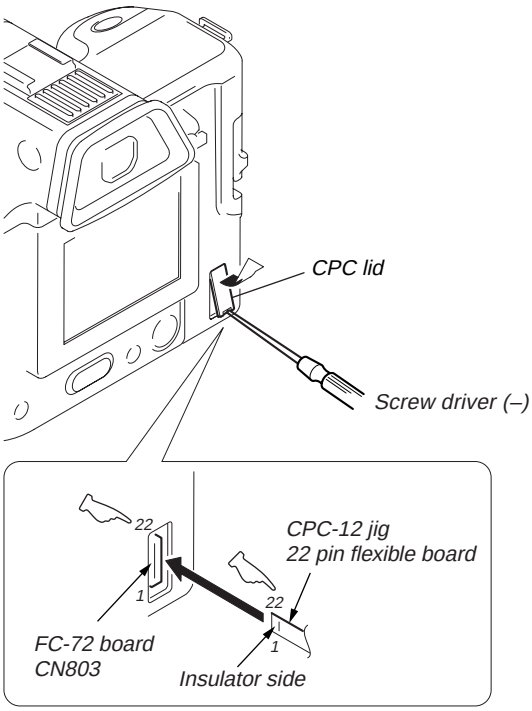
Page	INCORRECT	CORRECT
5-4 5-29 5-35		
5-6